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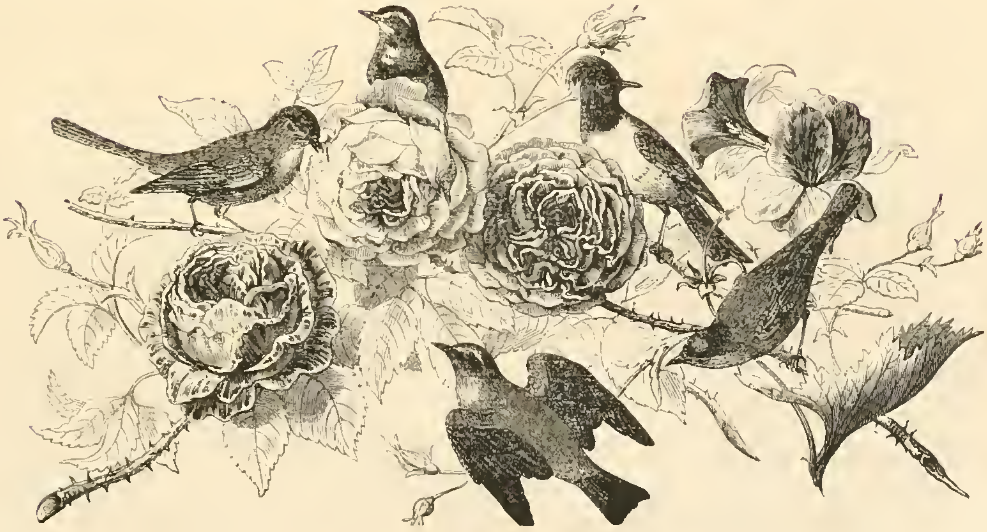
CASSELL'S
NATURAL HISTORY.

THE FEATHERED TRIBES.



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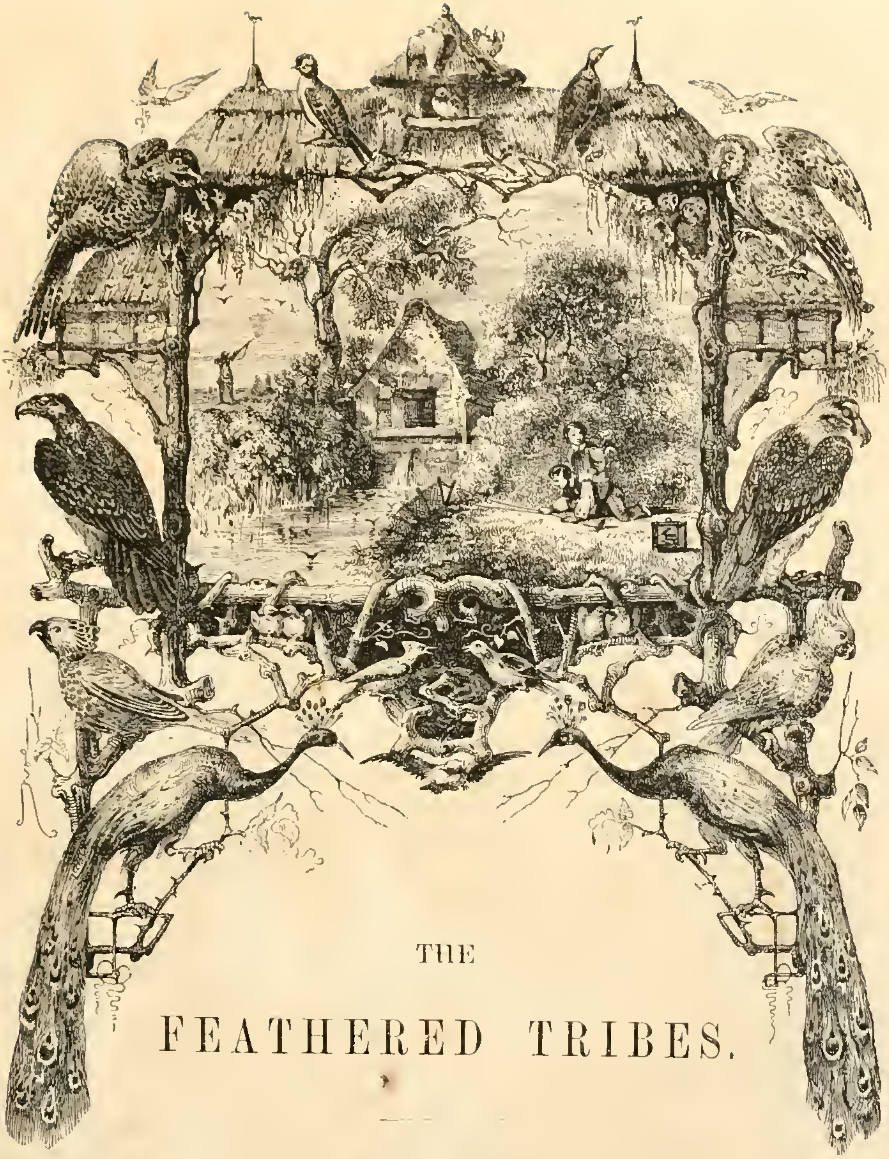


THE
FEATHERED TRIBES.

CHAPTER I.

THE STRUCTURE OF BIRDS.

The birds, attired in all their beauty, or in their humblest guise, unobtrusive in their humility, or assuming the proud bearing of conscious power, are plenteously scattered over the surface of the earth. The lark delights us with its notes as we cross the verdant or the ploughed field ; the partridge flies from the intruder verging on its nest amidst the standing corn ; the coo of the pigeon salutes us in the woods, and many a delightful song is heard in the groves. We meet with the feathered tribes among the busy haunts of men ; and even on the dismal sand, where the fragments of vessels are bleaching, and over which flow the waters that engulfed their crews, the sight of a penguin or the scream of a curlew may recall the mind to animated nature, and supply it with subjects of pleasure and admiration.

Favourites of man, as many of the feathered tribes have been, from the symmetry of their form, the exquisite softness, beauty, or splendour of their plumage, their elasticity and vigour on the wing, the thrilling melody of their songs, and the various economical purposes to which they are adapted, there is still but little known by people generally respecting them. And yet there is not one of the myriads of birds, whether finding a domicile immediately around our dwellings, covering the branches of forest trees, wading the morass—so treacherous and even fatal to man,—scouring the sandy and arid desert, sporting on the billows of the ocean, or gaining their subsistence by diving in its waters,—no, there is not one of them but is worthy of careful and repeated attention, in the light of all the intelligence that can now be obtained as the result of extensive and long-continued observation.

It is, therefore, our purpose to present to the eye of the reader a series of representations of a large number of the feathered tribes, accompanied by popular, yet scientifically accurate, accounts of their appearance, localities, and instincts; and briefly to point out, by way of prelude, some remarkable circumstances relating to their structure and habits, and also as to the principles adopted in their classification by naturalists.

Beginning with their structure, it may be remarked that the skeleton of birds (fig. 1) has the same constituent parts as that of other vertebrated classes; tho bones of the anterior extremity, though destined exclusively to support the wing, retain the same divisions, and are composed of the usual elements. As birds swallow their food entire, there is no necessity for any part of the bulky apparatus, or hard and solid teeth, large muscles, and heavy jaws, which are required by quadrupeds, and hence the head admits of being greatly reduced in its dimensions.

The ribs and the viscera are placed as far back along the spinal column as possible, and a long flexible neck extends from the trunk to the head, which is thus carried considerably forwards. In order, too, that the bird may be exactly balanced while it is flying, its centre of gravity must be brought precisely under the line connecting the articulation of the wings with the trunk, for it is at these points that the resistance of the air causes it to be supported by the wings. When the bird is resting on its legs, the centre of gravity must, in like manner, be brought immediately over the base of support formed by the toes; it becomes necessary, therefore, to provide means for shifting the centre of gravity from one place to another, according to circumstances, and to adjust its position with considerable nicety; otherwise there would be danger of the equilibrium being destroyed, and the body oversetting.

The principal means of effecting these adjustments consist in the motions of the head and neck, which last is, for that purpose, rendered exceedingly long and flexible. The number of cervical vertebræ (A) is generally very considerable; in the mammalia there are seven, but in many birds there are twice that number, and in the swan there are twenty-three.

As the spinal marrow passes down along the canal formed by the arches of the vertebræ, and any pressure applied to its tender substance would instantly paralyse the whole body, and speedily put an end to life, an extraordinary provision was required to guard against the possibility of such an accident during the many violent contortions into which the column is liable to be thrown. This is accomplished in the simplest and most effective manner, by enlarging the diameter of the canal at the upper and lower part of each vertebra, while at the middle it remains of the usual size, so that the shape resembles that of a hour-glass. Thus a wide space is left at the junction of each successive vertebra, allowing of very considerable flexion, without reducing the diameter of the channel beyond that of the narrow portion, and therefore without compressing the spinal marrow.

A totally different plan is pursued in the vertebræ of the back and loins. To ensure the proper action of the wings, the great object here is to prevent motion, and to give all possible strength and security; and accordingly, the whole of this portion of the spine, together with the *sacrum*—the bone which forms the basis of the vertebral column—is consolidated into one piece. All the processes are largely developed, and pass obliquely from one vertebra to the next, mutually locking them together; and in order most effectually to preclude the possibility of any flexion, the spinous processes, and sometimes even the bodies of the dorsal vertebræ, are immovably soldered together by osseous matter so as to form one continuous bone.

The sacrum consists of the union of a great number of vertebræ, as many as twenty being united for the same purpose, so that they form a bone of great length. The *coccygeal vertebræ*—those connected with the lower part of the sacrum—are also numerous, but are compressed into a small space, and enjoy great latitude of motion, being subservient to the movements of the tail.

The ribs are numerous, and of considerable strength; they send out processes, which are directed backwards, passing over the next rib before they terminate, and giving very effectual support to the walls of the chest. The ribs are continued along the abdomen, and afford protection to the viscera in that cavity; and some arise even from the breast-bone, or *sternum*, and the iliac bones. Those which are in front are united to the sternum by osseous appendices, and appear as the continuation of the ribs, or as if the ribs were joined in the middle.

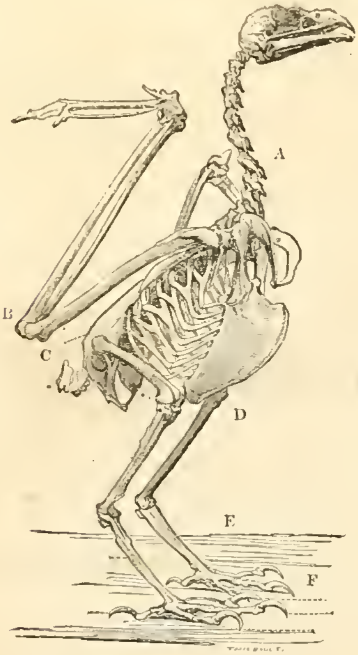


FIG. 1.—SKELETON OF A BIRD.

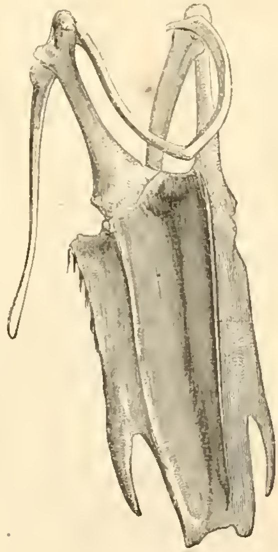


FIG. 2.—STERNUM OF BIRDS.

The sternum is of enormous size, extending over a considerable part of the abdomen, and having a large perpendicular crest descending, like the keel of a ship, from its lower surface. This is designed to provide extensive attachment to the large pectoral muscles employed to move the wings, and which, taken together, are generally heavier than the rest of the body, and they are also of enormous strength. The flap of a swan's wing is said to be capable of breaking a man's leg, and a similar blow from an eagle has been known to prove instantly fatal.

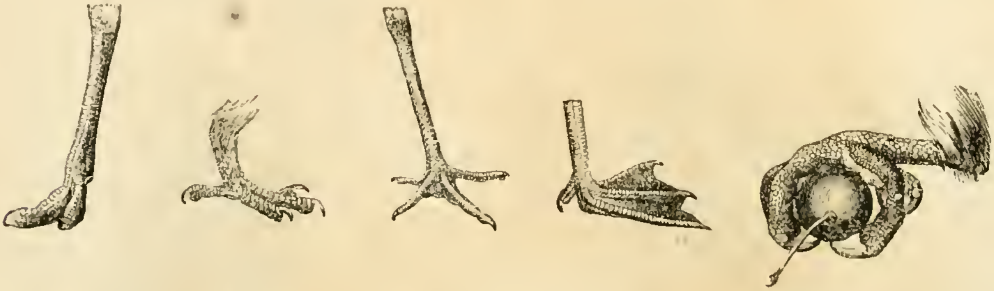
The well-known bone called the merry-thought, counteracts the tendency to approach which the action of the wings produces in flight. There are also clavicles, or collar-bones, which are long and narrow, uniting at one end with the *scapulæ*, and at their point of junction assist to form the cavity in which the head of the humerus is received.

The inferior limbs consist of the following parts:—The thigh-bone, or *femur* (C), which is short, lies close to the body, enveloped in muscles, covered with the skin, and concealed beneath the feathers. The next part is the *tibia* (D), and to this succeeds the *tarsus* (E), consisting of a single elongated bone, covered only with scaly skin, having the toes articulated to its extremity. In most birds the toes (F) are three before and one behind, but here great variety prevails.

The number of bones which compose each respective toe appears, indeed, to be regulated by a uniform law. The innermost toe, which may be compared to a thumb, consists invariably of two bones; that which is next to it in the order of sequence has always three; that which follows has four; and the outermost toe has five bones: the claws being in every case affixed to the last joints, which have, therefore, been termed the ungual bones.

The perching birds have the two middle toes parallel to each other, and the inner and outer toes turned back, so as to be opposed to them in action. They are thus enabled to grasp objects with the greatest facility, having, in fact, two thumbs, which are opposable to the two fingers.

FIG 3.



OSTRICH. EAGLE. MARABOU. SEA-MEW. PARROQUET.

When the bird is perched, it embraces the branch with its claws, and, by a wonderful mechanism, it holds it the more strongly the longer it is placed there. The flexible muscles of the claws pass over the joints of the knee and the talons, and when these, fatigued by the weight of the body, begin to bend, they draw over the tendons of the muscles in question; then the claw bent by them seizes with greater force the branch which sustains the bird. As to the birds with long claws, which generally keep on the earth, they have been spared the fatigue of long standing, by preventing the thigh from bending over the leg; when the member is extended, the lower part of the femur, which presents a hollow, is rested on a projection of the tibia, like the bowl of a bilboquet on its axis, and the animal, not wanting to contract its muscles, experiences no weariness.

When we proceed to the history of families, it will be seen that the disposition of the claws is in harmony with the habits of the bird; thus walking birds, as the ostrich, have long and strong claws and a small foot; birds of prey, like the eagle, have the claws short and vigorous, the nails crooked and sharp; the birds which live on the banks of streams, and seek there for prey, have slender claws, but excessively long, and seem to be mounted on stilts; among the birds which inhabit deep waters, the claws are palmated, that is to say, between the parts a membrane is extended which does not hinder them from expanding or contracting it, and renders the foot a true fin. Lastly, among the birds which need a vertical position to climb, the outer claw is behind, beside the thumb, whence it appears that they have two fingers only in front: the parroquet and the green woodpecker are instances.

The impression made upon the mind by an examination of a bird's external structure, is deepened if its skeleton be examined, combining, as it does, great lightness with strength, and that on true mechanical principles. So remarkably light is it, that the one of the white pelican, a bird five feet in length, was found by the Academicians of Paris to weigh only twenty-three ounces, while the entire bird weighed nearly twenty-five pounds. Had the shoulder bone been one solid piece, its weight would have been objectionable, and unequal to the strain which it would have to endure, it would soon have snapped asunder; but constructed as a hollow cylinder, it is light, and at the same time strong. Nor is lightness the only end gained by this hollowness, for as the bones ot a bird have no marrow, so they are reservoirs for air, and thus peculiarly adapted to the creatures' ordinary mode of life.

FIG.—4. THE APTERYX.

How precisely one bone is adapted to all the rest will be apparent from an interesting fact in the work of an eminent modern writer:—*

"The incident," he says, "which I am about to mention, exhibits the result of an immense induction of particulars in this noble science, and bears no faint analogy to the magnificent astronomical calculation, or prediction, whichever one may call it, presently to be laid before you. Let it be premised, that Cuvier, the late illustrious French physiologist and comparative anatomist, had said, that in order to deduce from a single fragment of its structure the entire animal, it was necessary to have a tooth, or an entire articulated extremity. In his time, the comparison was limited to the external configuration of bone. The study of the internal structure had not proceeded so far.

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* "Intellectual and Moral Development of the Present Age." By S. Warren.

"In the year 1839, Professor Owen was sitting alone in his study, when a shabbily-dressed man made his appearance, announcing that he had got a great curiosity, which he had brought from New Zealand, and wished to dispose of it to him. Any one in London can now see the article in question, for it is deposited in the Museum of the College of Surgeons, in Lincoln's Inn Fields. It has the appearance of an old marrow-bone, about six inches in length, and rather more than two inches in thickness, with both extremities broken off; and Professor Owen considered, that, to whatever animal it might have belonged, the fragment must have lain in the earth for centuries. At first, he considered this same marrow-bone to have belonged to an ox—at all events, to a quadruped; for the wall or rim of the bone was six times as thick as the bone of any bird, even the ostrich. He compared it with the bones in the skeleton of an ox, a horse, a camel, a tapir, and every quadruped apparently possessing a bone of that size and configuration; but it corresponded with none. On this, he very narrowly examined the surface of the bony rim, and at length became satisfied that this monstrous fragment must have belonged to a bird! to one at least as large as an ostrich, but of a totally different species; and, consequently, one never before heard of, as an ostrich was by far the biggest bird known. From the difference in the strength of the bone, the ostrich being unable to fly, so must have been unable this unknown bird; and so our anatomist came to the conclusion, that this old shapeless bone indicated the former existence, in New Zealand, of some huge bird, at least as great as an ostrich, but of a far heavier and more sluggish kind. Professor Owen was confident of the validity of his conclusions, but could communicate that confidence to no one else; and notwithstanding attempts to dissuade him from committing his views to the public, he printed his deductions in the *Transactions of the Zoological Society* for the year 1839, where fortunately they remain on record as conclusive evidence of the fact of his having then made this guess, so to speak, in the dark. He caused the bone, however, to be engraved; and having sent 100 copies of the engraving to New Zealand, in the hopes of their being distributed, and leading to interesting results, he patiently waited for three years—namely, till the year 1842—when he received intelligence from Dr. Buckland, at Oxford, that a great box, just arrived from New Zealand, consigned to himself, was on its way, unopened, to Professor Owen; who found it filled with bones, palpably of a bird, one of which was three feet in length, and much more than double the size of any bone in the ostrich! And out of the contents of this box the professor was positively enabled to articulate almost the entire skeleton of a huge wingless bird, between ten and eleven feet in height, its bony structure in strict conformity with the fragment in question; and that skeleton may be at any time seen at the Museum of the College of Surgeons, towering over, and nearly twice the height of the skeleton of an ostrich; and at its feet is lying the old bone from which alone consummate anatomical science had deduced such an astounding reality: the existence of an enormous extinct creature of the bird kind, in an island where previously no bird had been known to exist larger than a pheasant or a common fowl!"

Of a wingless bird, the apteryx (fig. 4) will afford an example; while as the far greater number of the feathered tribes are designed for progression in the air, so for this they are specially adapted. Look, for example, at the swallow, having an osseous framework, like that already described. Its body is not like that of a snake, for then it would have wanted the central point of gravity, which is necessary for the maintenance of an even and steady course. Nor does it approach the form of a globe, like one of the tenants of the waters, since in this case it could not have passed like an arrow through the air. It is, in fact, an aerial boat, of which the head and pointed beak form the prow, and the tail the rudder. All its muscles, too, are endowed with enormous strength, its lungs are of great extent;

and what other covering could equal its beautiful plumage? Scales are manifestly adapted to a very different race; little less appropriate would be a covering of hair; but feathers, full and deep as they are, increase the superficies of the body, and are also of marvellous lightness.

Birds, joyous birds of the wandering wing!
Whence is it ye come with the flowers of Spring?
"We come from the shore of the green old Nile,
From the land where the roses of Sharon smile,
From the palms that wave through the Indian sky;
From the myrrh-trees of glowing Araby.

"We have swept o'er the cities, in song renown'd,—
Silent they lie, with the deserts round!
We have crossed proud rivers, whose tide hath roll'd
All dark with the warrior blood of old;
And each worn wing hath regained its home,
Under the peasant's roof-tree, or monarch's dome."

And what have ye found in the monarch's dome,
Since last ye traversed the blue sea's foam?
"We have found a change, we have found a pall,
And a gloom o'ershadowing the banquet's hall,
And a mark on the floor, as of life-drops spilt,—
Nought looks the same, save the nest we built!"

Sad is your tale of the beautiful earth,
Birds that o'ersweep it in power and mirth!
Yet, through the wastes of the trackless air,
Ye have a guide, and shall *we* despair?
Ye over desert and deep have pass'd—
So shall *we* reach our bright home at last!

MRS. HEMANS.

CHAPTER II.

THE PLUMAGE AND FLIGHT OF BIRDS.

The power of flight is enjoyed, not only by the birds that migrate to distant latitudes, but by those which subsist on the seeds and insects sought on the ground, and weave their nests among the branches of trees, as well as by the multitudes dwelling on the surface of the ocean, and gaining there appropriate sustenance. Yet, while it is a common endowment to leave the earth, the trees, the marsh or the sea, it is not alike in all; for some birds are untiring on the wing, while the flight of others proves speedily exhausting. Equally varying is the character of their flight; so that an experienced naturalist will point out a bird with which he has become acquainted in its natural state from its flight alone, dependent as it is on pinions exquisitely adapted to its actual condition.

Every variation we can discover has its specific object and use. The wag-tail, pursuing on the ground what the swallow does in the air, seems incapable of keeping itself at rest;—ever in motion, because it is not so easy to begin to move from a state of inaction; and thence, probably, the length of its apparent superfluity of tail. To the sea-birds, which neither dive nor swim, long flights and great duration are necessary, because their food is often rare, wide apart, and far, also, from their homes. Hence the great and untiring powers of the gull and the gannet, and especially of the albatross, the velocity of which is said to amount to a hundred miles in an hour.

Audubon states that pigeons have been killed, in the neighbourhood of New York, with their crops full of rice, which they must have collected in the fields of Georgia or Carolina, these districts being the nearest in which they could have procured a supply of this kind of food. As their power of digestion is great, and they will decompose food entirely in twelve hours, they must have travelled, in this instance, between three and four hundred miles in six hours, which shows their speed to be, at an average, of about one mile in a minute. A velocity such as this would enable one of these birds to visit the continent of Europe in less than three days.

The plumage, in all cases, is exquisitely suited to the circumstances of the creature which it covers and perhaps adorns. There, for instance, is a wing rather adapted to aid the bird in running than flying, as it scours along in the desert, and leaves its foe far behind. See! how soft and loose it is, utterly destitute of compactness and vigour. Observe another: it is full, loose, and delicately soft, presenting no sharp or rigid edges to the air, and therefore no resistance, but yielding promptly to every breath; it is that of the owl, one of the birds of night, which pounces stealthily and noiselessly on its prey. And to turn only to another bird: its feathers are close and rigid, and have a surface like that of burnished metal; the wings are long and pointed, and the tail is forked, and as elastic as it is firm: it is the humming-bird, darting hither and thither, and that with a rapidity which almost eludes the eye.

From these general remarks it is desirable to descend to some particulars; for while the plumage of a bird demands admiration, it is also due to the parts of which it is composed. If a feather be carefully examined, it will be found composed of three primary parts: the quill, the shaft, and the vane. These, with the subordinate parts, are exhibited in the adjoining figure. In (S) is exhibited the posterior surface of the solid stem, divided into two parts by a longitudinal grove, and from either side of which proceed a series of laminæ, composing with their fibrils what is termed the vane (V). The lines, from which the laminæ arise, approach one another at the lower part of the stem, till they meet at a point. Here the groove terminates, and there is a small orifice (O) leading to the interior of the quill. From this part the transparent tubular portion of the quill (T) commences; and at its lower extremity (L) there exists a second or lower orifice.

The separate pieces, or laminæ, of which the vane is composed, are called filaments, or threads. It will readily be remembered how much stronger the vane shows itself to be when pressed in a direction perpendicular to the plane, than when rubbed either up or down in the line of the stem. The reason of this is, that the laminæ, of which the vane is composed, are flat, and placed with their flat sides towards each other, hence they easily bend for the approaching of each other, as may be perceived by drawing the fingers ever so lightly upwards. But they are much harder to bend out of their plane, as that is the direction in which they have to encounter the impulse and pressure of air, and in which their strength is wanted and daily tasked.

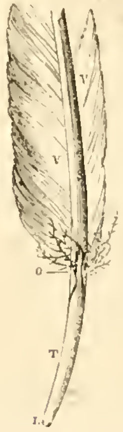

FIG. 5.—THE FEATHER.

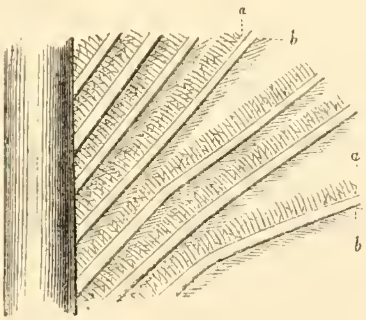

FIG. 6.—FIBRILS OF A FEATHER.

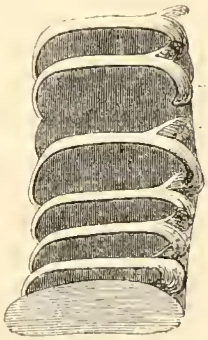

FIG. 7.—LAMINÆ INTERLACED.

This one peculiarity in the structure of a feather is worthy attention, but a second is still more remarkable. For if a feather be examined, it will be observed that the laminæ, or threads, in their natural state unite; that their union is something more than the mere opposition of loose surfaces; that, though there is no glutinous cohesion between them, they are not parted without some degree of force; that, therefore, by some mechanical means or other, they catch or clasp among themselves, thereby giving to the vane its closeness and compactness of texture. Still further: when two laminæ which have been separated by accident or force are brought together again, they immediately re-clasp; the connexion, whatever it is, is perfectly recovered, and the vane of the feather becomes as smooth and firm as if nothing had occurred. Let the finger be drawn down the feather, which is against the grain, and probably the junction of some of the contiguous threads is broken; while if the finger be drawn up the feather, the threads are restored to their former state.

Now these effects may be traced to a very beautiful contrivance. The laminæ are interlaced with one another, and the interlacing is effected by means of a vast number of fibres or teeth, which shoot forth from each side of the laminæ, and which hook or grapple together. These fibres are crooked, but curved after a different manner. Those which proceed from the thread on the side towards the extremity of the feather are longer and more flexible, and bent downwards there, as those which proceed from the side towards the beginning, or quill-end, of the feather are shorter, firmer, and turned upwards. When two laminæ are pressed together, so that these long fibres are forced far enough over the short ones, their crooked parts fall into the cavity made by the crooked parts of the others—as a latch fastened to a door enters into the cavity of the catch fixed to the door-post, and there hooking itself, fastens the door; for it is in this manner that one thread of a feather is fastened to another.

All this the accompanying illustrations will render, we trust, perfectly clear. The fibrils of a feather from the wing of a goose (fig. 6) are represented magnified at *a a*, *b b*, as they arise from the two sides of the edges of each lamina. They are exceedingly numerous, above a thousand being contained in the space of an inch. They are, as is manifest from the engraving, of two kinds, each one having a different form and curvature. Those marked *a a*, which arise from the side next to the extremity of the feather, are branched or tufted, and bend downwards. Those marked *b b*, proceeding from the other side of the lamina, or that nearest the root of the feather, are shorter and firmer, and do not divide into branches, but are hooked at the extremities, and are directed upwards.

The appearance they present will be seen in fig. 7. It shows distinctly the form, direction, and relative position of each set of fibrils, and the manner in which they lay hold of one another. This mechanism is repeated over every part of the feather, and constitutes a closely reticulated surface of great extent, admirably adapted to prevent the passage of the air through it, and to create by its motion that degree of resistance which it is intended the wing should encounter. In feathers not intended for flight, as in those of the ostrich, the fibrils are altogether wanting: in those of the peacock's tail, the fibrils, though large, have not the construction that fits them for clasping those of the contiguous laminæ; and in other instances they do so very imperfectly.

In addition to these parts of a feather, there is what is called the accessory plume. It is a small downy tuft, which not only assumes a very different character in the feathers of different species, but is even very dissimilar in the feathers of different parts of the body of the same bird. The accessory plume is situated at the end of the quill farthest from the body. In the strong feathers peculiar to the wings and tail it remains a small tuft of down; but in the feathers of the body, as the hawks, grouse, ducks, gulls, and some others, it is found to be of all sizes. In the ostrich, the feathers have no accessory plume; in the rhea there is a tuft of down; in the emu the accessory plume is augmented to the full size of the principal shaft, and the web and the feather of this bird is constantly and correctly represented as having two plumes on one quill. In the cassowary, besides the double shafts and webs from a single quill, as in the emu, there is still an accessory plume, thus forming three distinct parts.

The organs by which the bird rises from the ground, and maintains and directs its aerial progression, are, however, the wings and the tail, and they require of us, therefore, a particular examination.

In the wings there is an osseous framework, acted upon by muscles, the tendons of which are respectively inserted into the several bones composing it, the whole being covered with skin, and affording a solid basis on which the feathers rest. The wing, which is, in fact, the arm of the bird, consists, as in man, of the true-arm, the fore-arm, and the hand.

The true-arm consists of the *humerus* (A), a cylindrical and hollow bone, the head of which is received into a shallow cavity of the *scapula*, or shoulder-blade (*a*), at the angle made by the sudden turn and descent of the large *coracoid process*, which is attached at its posterior extremity to the anterior margin of the breast-bone. The fore-arm consists of an *ulna* (B) and a *radius* (C), which is very slender. The *ulna* has often a row of tubercles on the upper surface, denoting the situation of the barrels of the secondary quill feathers, to which it yields support. The hand is divided, as usual, into *carpus* (D), *metacarpus* (E), and *phalanges ;* but, so far from being flexible, as the name suggests, it is a firm, inflexible

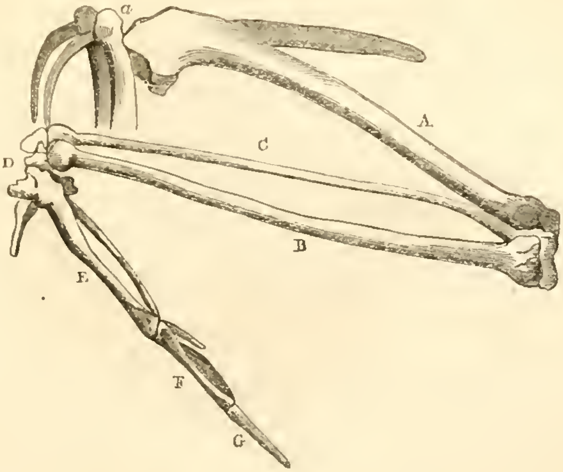

FIG. 8.—BONES OF THE WING.

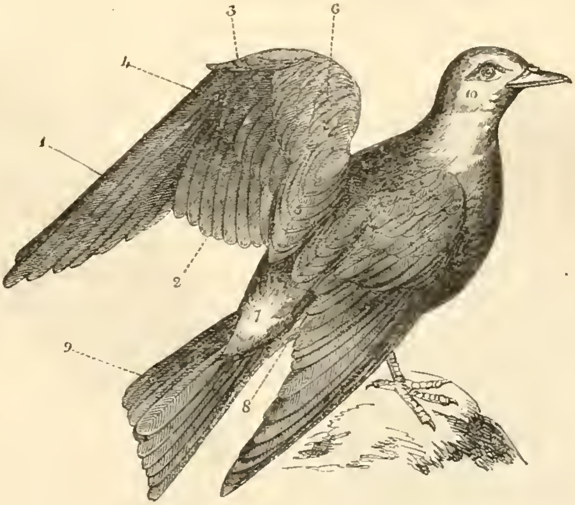

FIG. 9.—FEATHERS OF A BIRD.

basis for a series of stiff elastic feathers continuous with those proceeding from the *ulna*. On the anterior edge, and at the base of the *metacarpus*, is seated the thumb bone, a single jointed piece (F). The fingers (G) are two; the first consists of two *phalanges*, a broad basal bone, as if several were compacted into one, and a small pointed bone. The second finger consists merely of a small portion in close contact with the first *phalanx* of the first finger. The hand, thus formed, has no such power as we ascribe to that organ; it is a firm, inflexible support for a series of stiff elastic feathers continuous with those proceeding from the *ulna*.

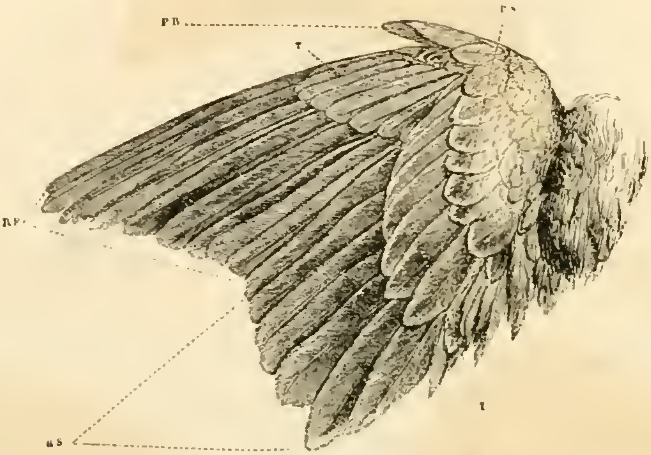

FIG. 10.—WING OF A BIRD.

The feathers arising from the hand and *ulna* are termed quill-feathers. They are divided into two sets. One set arises from the hand, consisting of the most important of the series, and chiefly instrumental, by their length and shape, their flexibility or stiffness, in determining the character or power of the flight. These are the *primary quill-feathers* (fig. 9, No. 1); they are ten in number, but differ in form as well as in relative length. The other set arise exclusively from the *ulna*, and are the *secondary quill-feathers* (No. 2); they are usually shorter, broader, and less rigid than the former, and their number varies.

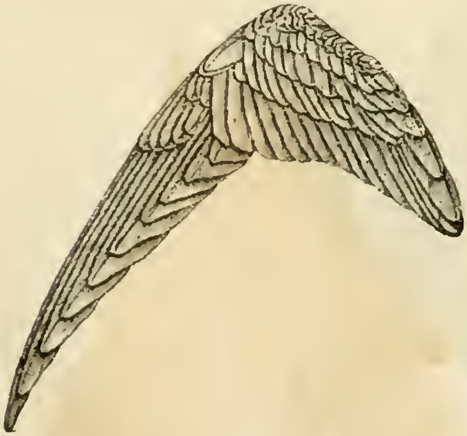

FIG. 11.—ACUTE WING OF A FALCON.

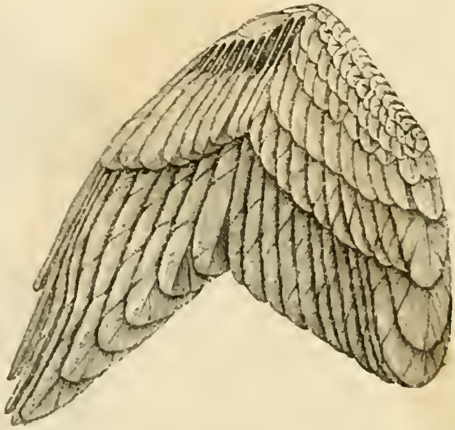

FIG. 12.—OBTUSE WING OF A BUZZARD.

From the small bone which represents the thumb arise certain short stiff feathers, lying close on the quills of the *primaries*, and constituting the *winglet*, or *spurious wing* (No. 3).

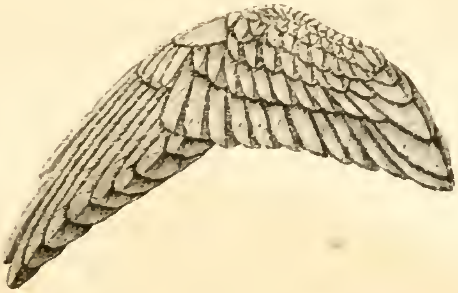

FIG. 13.—SUB-ACUTE WING OF THE GOAT-SUCKER.

There is also a group of feathers termed *tertiaries*, arising from the humeral joint of the fore-arm, and which, in many birds,—as the curlew, plovers, lapwings, &c.,—are very long, and form a pointed appendage very apparent during flight. In most birds, however, they are not to be distinguished from the rest of the *greater coverts* (No. 4), of which

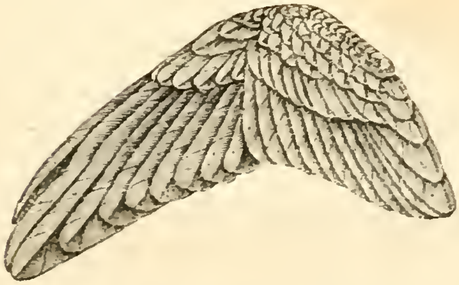

FIG. 15.—SUB-OBTUSE WING OF A CUCKOO.

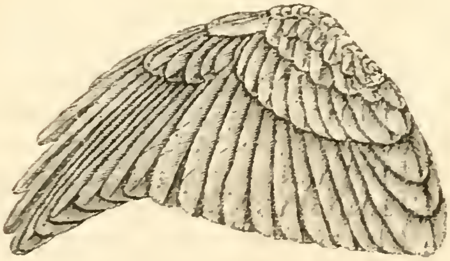

FIG. 16.—SUB-OBTUSE WING OF A JAY.

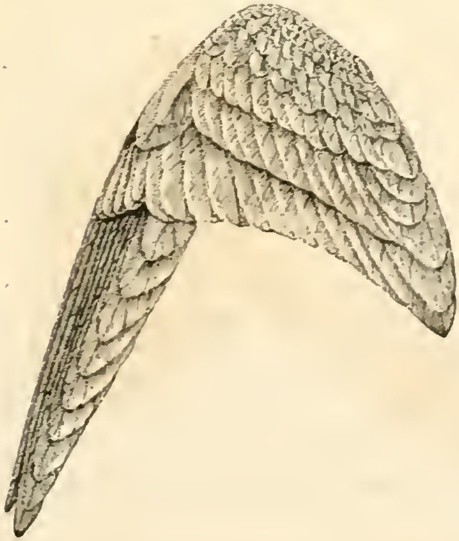

FIG. 14.—SUB-ACUTE WING OF THE SEA-SWALLOW.

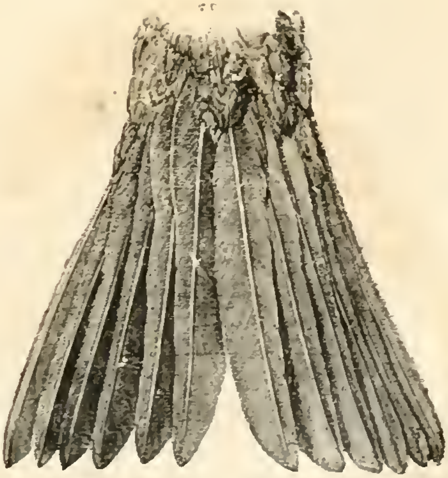

FIG. 17.—FEATHERS OF THE TAIL.

they are, in fact, a continuation. Other feathers, attached to the upper part of the *humerus*, lie along the sides of the back, and in many birds are of great length; they are called *scapularies* (No. 5).

A series of feathers, termed the *lesser coverts*(No. 6), are disposed in scale-like order, row after row, on the fore-arm and carpal joint; they cover the barrels of the quill-feathers. Below them extends a series of larger feathers, which sweep across the wing, encroaching far on the *primaries*, and when the wing is closed usually hiding the *secondaries;* these are the *greater coverts*, of which the *tertiaries* are a continuation. The under surface of the wing is lined with softer feathers, termed *under coverts.*

The quills of the tail-feathers are hidden beneath what are termed *the upper tail-coverts* (No. 7), which, in some birds, as the peacock, form long, flowing, and exquisitely beautiful plumes. Beneath the quills of the tail-feathers are covered by *under tail-coverts* (No. 8), consisting of lax feathers, which in some birds, as the marabou, form extremely soft and delicate plumes. On the cheek may be seen a tuft of feathers covering the ears (No. 10), and therefore called *ear coverts*, and there is only to be added the tail (No. 9) to complete a general view of the plumage of birds.

The wing is set in motion by powerful muscles, and becomes an organ fitted for swimming, that is to say, for energetically repelling a fluid much more resisting than the air. Birds whose wings are changed into fins are called *impenni* (no wings); those whose wings, although furnished with feathers, is reduced to a stump, are called *rudipenni* (rudimentary wing); all others organized for flight are called *alipenni.*

This engraving (fig. 10) exhibits to view the following parts:—

T, wing coverts; P B, spurious wing or winglet, composed of the feathers of the thumb; R P, quill feathers; R S, secondaries; P S, scapularies.

In birds designed for flight the wings vary in length according to the species; and besides the differences in the absolute length of the wing, there are others in the relative length of the feathers of the wing. When the longest feathers occupy the edge side of the wing, and then go on decreasing from this edge, the wing is *acute,* and the bird is called *acutipennus.*

When, on the contrary, the longest feathers correspond with the middle of the hand, the wing is *obtuse*, and the bird is called *obtusipennus.*

Each of these types may offer three cases; when the second feather of the wing, beginning from the edge, is the longest, the wing is simply *acute;* when the first feather is as long or longer than the others, the wing is *sur-acute;* when the third feather is equal to the second, the wing is *sub-acute.*

In the same way three degrees have been established in the obtuse wing; if it is the fourth feather, which is the longest, it is simply *obtuse;* if it is the third it is *sub-obtuse;* if it is the fifth, or following, it is *sur-obtuse.*

These characteristics are of great importance, since they express the degree of the power of flight. The bird with *acute* wings moves with greater agility than the one whose wings are obtuse; the obtuse wing is nothing else than an acute wing, the extremity of which has undergone an oblique section. And the further the wing, which is the arm of the lever of the power, has its extremity distant from the point of support or centre of movement, the more energetic it is in repelling the air which presents the resistance.

Thus the manœuvres of the bird with acute wings are more rapid and more varied than those of other birds; it can move in all directions, like a boat with oars, and easily seize a prey which is trying to escape with obtuse wings, and which, like a ship with sail, can only tack about. Hence the names *sailing* birds, and *rowing* birds, according as their wings are obtuse or acute.

As the direction in which a bird can fly depends greatly on the form of its wings, Sir Everard Home justly infers that a motion directly upwards can only be performed by birds whose wings are nearly horizontal, as the lark and the quail. "In general," he says, "the wings are placed obliquely; this is principally owing to the length of their feathers, the fixed point of which is at the root. When birds fly horizontally, their motion is not in a straight line, but obliquely upwards, and they allow the body to come down to a lower level before a second stroke is made by the wings, so that they move in a succession of curves. To ascend obliquely, the wings must repeat their strokes upon the air in quick succession; and in descending obliquely, these actions are proportionally slower.

"In birds of prey the form of the wings is very oblique, so that they cannot rise in the air perpendicularly unless they fly against the wind; they have, however, a greater power of horizontal motion than other birds, because the extreme parts of the wings are long, and the ends of the feathers lap over each other, which opposes a uniform resistance to the air; while, in other birds, the air passes through between the feathers, which lessens the power of keeping the wing oblique. To enable themselves to turn to the right or left, they move one wing more rapidly than the other. This is attended with difficulty when the flight is rapid; they, therefore, make a large sweep before they can turn round."

The tail of the bird serves as a rudder. The last bone of the caudal *vertebræ* is larger than the rest, and of a different figure. The development of this bone is necessary, as it supports the tail-feathers, the quills of which are fixed in capsules, as well as powerful muscles. Thus they are capable of being closed, elevated, or depressed, and also of being expanded, as in the turkey-cock. The tail-feathers vary in size, length, shape, and strength, in various groups or genera. Their usual number is twelve, sometimes they amount to fourteen, and in the gallinaceous tribes to eighteen, and even more. When the tail is short, the office of directing the flight is performed by the legs, which are then generally very long. In many birds, as in the woodpecker, the tail is much employed as a support to the body in climbing trees.

There are yet several circumstances respecting the structure and action of the wings which remain to be noticed. Thus, if we attend to the mode of their articulation with the scapula, we find it producing a motion oblique with regard to the axis of the body, so that the stroke which they give to the air is directed both downwards and backwards, and the bird, while moving forwards, is at the same time supported in opposition to the force of gravity.

The different portions of the wing are likewise so disposed as to be contracted and folded together when the wing is drawn up, and fully expanded when it descends in order to strike the air. Without this provision, a great part of the motion acquired by the resistance of the air against the wing in its descent, would have been lost by a counteracting resistance during its ascent. The disposition of the great feathers is such that they strike the air with their flat sides, but present only their edges in rising; what is called "feathering the oar," in rowing, is a similar operation, and derives its name from this resemblance.

As the inclination of the wing is chiefly backwards, the greatest part of the effect produced by its action is to move the body forwards. Birds of prey have a great obliquity of wing, and are consequently better adapted to horizontal progressive motion, which they chiefly practise in pursuing their prey, than for a rapid perpendicular flight. Those birds, on the contrary, which rise to great heights, in a direction nearly vertical, such as the quail and the lark, have the wings so disposed as to strike directly downwards, without any obliquity whatever.

The flight of a bird in the air is conducted on similar principles to that of a fish swimming in the water, except that the bird is heavier in comparison with the air than the fish when compared with the water. Some of the inhabitants of the deep are of enormous bulk, yet, provided with a huge layer of oily substance called blubber, immediately under the skin, they proceed hither and thither at pleasure. In other instances, the organ called "the swimming bladder" answers as effectually the same purpose.

The air, which in fishes is contained in one cavity, is distributed into numerous cells in various parts of the bodies of birds. These cells are divided by partitions, provided, in the case of large birds, with muscular fibres, supposed to be employed in sending the air back to the lungs, as is done by the diaphragm in other animals, but which is wanting in birds.

In addition to these air-cells, which fill the whole cavity of the body from the neck downwards, and serve the double purpose of assisting in the assimilation of nutriment, by the supply of oxygen and the removal of carbon, and of diminishing the weight of the body, there are others situated in the bones themselves. This is particularly the case with the larger bones. Those accustomed to such observations can tell, from inspecting the bone of a full-grown bird, whether or not it contains air-cells, without even seeing any of the openings through which the air enters. Such bones are generally of a purer white, and sometimes they are extremely thin. The long bones are usually situated close to one of the extremities, while in bones in pairs, there is, for the most part, only one common opening.

As Blumenbach observes: "The air-bones in young birds are described to be filled with marrow, which becomes gradually absorbed to make room for the admission of air. This gradual expansion of the air-cells, and absorption of the marrow, can nowhere be observed so well as in the young tame geese, when killed in different periods of the autumn and winter. The limits to the air-cells may be clearly seen from without by the transparency of the bony walls. From week to week the air-cells increase in size, till, towards the close of the season, the air-bones become transparent.

"In all these bones the marrow first disappears from the vicinity of the opening which admits the air, and continues longest at the points furthest removed from this opening. Towards the close of the summer, and beginning of autumn, although in external appearance the young goose resembles the parent, no trace of air-cells can be discovered in its bones, the interior of the bones being then filled with marrow. About the fifth or sixth month the marrow begins to disappear. This circumstance, which applies also to other birds, shows with what caution one should form an opinion, from young birds only, on the size of the air-cells. In many kinds of birds the air-cells of some bones are nearly fully developed, although they have the openings of the bones which lead to the air-cells."

The quills of the feathers accord, in this instance, with the structure of the bones. While growing, they are filled with an organised pulp, but as soon as they arrive at their full growth, the absorption of this pulp renders them light. The lightness is increased by air being introduced into their cavity, through a small opening at the termination of the furrow where the quill ends and the plumelets of the feathers begin. Air is also admitted, in a similar manner, into the plumelets themselves.

Colonel Montague made many experiments to observe the air-cells in the structure of the gannet. He first introduced into the trachea a pipe, and when air was propelled through it, the whole internal cavity of the body was inflated, but no air passed into the external cells between the skin and the body. An incision was then made in the lower part of the abdomen into the body, when it readily found its way through the larynx, producing a noise similar to the sound emitted by the living bird.

A small opening was then made in the skin on the left side, about midway between the wing and the thigh, and a pipe was introduced, those directly communicating with the internal parts having first been stopped. It was now obvious that when air was forced through this orifice, the skin on that side, as far as the middle line of the body, was greatly inflated, extending into the lower part of the neck, along the larger joints of the wing, down the thigh, and also into the cavity of the body; but the right side was not in the least affected. The pipe at the trachea being now removed, the air produced a similar effect on the larynx, but not so loud. Still suspecting that there was a communication between the sides by means of some valvular apparatus, the right side was subjected to the same experiment; but the result negatived the expectation, the effect produced being similar in every respect.

"From a repetition of these experiments," says Colonel Montague, "it became evident that there was a communication between the lungs and the cellular membrane that covers the greater part of the body, as well as with the whole cavity of the body, but that, by reason of some valvular contrivance, the skin could not be artificially inflated through the lungs, although air would readily pass in a contrary direction. It is also clear that there is no communication between the two sides."

M. Tachard mentions the wounding of a large bird; and, on its dissection, he found under the fleshy panicles very delicate membranes, which enveloped the whole body. Folding differently, they formed many considerable pouches, particularly between the thighs and the belly, between the wings and the ribs, and under the craw. Some were so wide as to admit the two fingers; and these great pouches divided into many little ducts, which perpetual subdivision ran into an endless multitude of ramifications, which were perceptible only by the bubbles of air which inflated them; so that, on pressing the body of this bird, a little noise was heard like that produced by pressing the membranous parts of an animal that has been inflated. By the assistance of the probe and blowing, the communication of these membranes with the lungs was discovered.

The structure so admirably adapted to render birds light and buoyant is thus happily described by Sir Charles Bell:—

"First, it is necessary that birds, as they are buoyed in the air, be specifically lighter; secondly, the circumference of their thorax must be extended, and the motion of the ribs limited, that the muscles of the wings may have sufficient space and firmness for their attachment. Both these objects are attained by a modification of the apparatus of breathing. The lungs are highly vascular and spongy, but they are not distended with air. The air is drawn through their substance into the large cavity common to the chest and abdomen; whilst the great office of decarbonization of the blood is securely performed, advantage is taken to let the air into all the cavities, even into those of the bones.

"The weight of the body being a necessary concomitant of muscular strength, we see why birds, by reason of their lightness, as well as by the conformation of their skeleton, walk badly. And, on the other hand, in observing how this lightness is adapted for flight, it is remarkable how small an addition to their body will prevent them rising on the wing. If the griffon-vulture be frightened after his repast, he must disgorge before he flies; and the condor, in the same circumstances, is taken by the Indians, like a quadruped, by throwing the lasso over it. It is interesting to notice the relations of great functions in the animal economy: birds are oviparous, because they never could have risen on the wing had they been viviparous; if the full stomach of a carnivorous bird retard its flight, we perceive that it could not have carried its young. The light body, the quill-feathers, the bill, and the laying of eggs, are all necessarily connected.

"As every one must have observed, the breast-bone of birds extends the whole length of the body; and owing to this extension, a lesser degree of motion suffices to respiration; so that a greater surface, necessary for the lodgment and attachment of the muscles of the wings, is obtained, whilst that surface is less disturbed by the action of breathing, and is more steady. Another peculiarity of the skeleton of the bird, is the consolidation of the vertebræ of the back; a proof, if any were now necessary, that the whole system of bones conforms to that of the extremities, the firmer texture of the bones of the trunk being a part of the provision for the attachment of the muscles of the wings. The ostrich and cassowary, which are rather runners than fliers, have the spine loose.

"The vertebræ of the back being fixed in birds, and the pelvis reaching high, there is no motion in the body; indeed, if there were, it would be interrupted by the sternum. We cannot but admire, therefore, the composition of the neck and head, and how the extension of the vertebræ, and the length and pliability of the neck, whilst they give to the bill the office of a hand, become a substitution for the loss of motion in the body, by balancing the whole, as in standing, running, or flying. Is it not curious to observe how the whole skeleton is adapted to this one object, the power of the wings?

"Whilst the ostrich has no keel in its breast-bone, birds of passage are, on dissection, recognisable by the depth of this ridge of the sternum. The reason is, that the angle formed by this process, and the body of the bone, affords lodgment for the pectoral muscle, the powerful muscle of the wing. In this sketch of the dissection of the swallow, there is a curious resemblance to the human arm; and we cannot fail to observe, that the pectoral muscle constitutes the greater part of the bulk of the body. Borelli makes the pectoral muscles of a bird exceed in weight all the other muscles taken together, whilst the pectoral muscles of man are but a seventieth part of the whole mass of the muscles. And here we see the correspondence between the strength of this muscle and the rate of flying of the swallow, which is a mile in a minute, for ten hours every day, or 600 miles a day. Mr. White says truly, that the swift lives on the wing; it eats, drinks, and collects materials for its nest in flying and never rests but during darkness. If it be true that birds, when migrating, require a wind that blows against them, it implies an extraordinary power as well as continuance of muscular exertion.

"We see how nature completes her work, when the intention is that the animal shall rise buoyant and powerful in the air: the whole texture of the frame is altered and made light, in a manner consistent with strength. We see also how the mechanism of the anterior extremity is changed, and the muscles of the trunk differently directed."

The muscles, as might be supposed, are precisely adapted to the service they have to perform. The efforts of men to fly in the air are not likely to be more successful than those of the philosopher described in "Rasselas," who found that the *descent* only was easy, however disappointing and disastrous. For the muscles of the most powerful arm are slender and weak when compared with the wing-muscles of birds. If, therefore, wings of sufficient power could be contrived, the arms would be too feeble to wield them. While it need scarcely be added that there are no air-cells distributed through the human body to diminish its specific gravity by inflation.

"If each muscle of flight," says M. Chabrier, who has paid great attention to this subject, "were to contract individually and independently of the rest, it would only put in motion the most moveable parts of the body with which it is especially connected; there would be no reaction. This assertion is true in all respects; as, for example, in the depression of the wings during flight, the resistance or the contraction of the middle pectorals and their congeners is absolutely necessary, since, without it, the wings would fall by their own weight, and the action of the great pectorals would be useless. Besides, in the depression of the wings, the fixed point of the middle pectorals where the respective tendons attach themselves to the humerus being removed, the sudden contraction of these pectorals must necessarily facilitate the ascension of the trunk, until the humerus is stopped by the cessation of action in the great pectorals. It may easily be conceived why the projecting muscles of the trunk and the depressors of the wings are stronger than the elevators; it is because the former cause the trunk to start, and by this means depress the wings, notwithstanding the resistance of the latter; these, being unable to prevent the humerus from descending, become fixed there, and draw up the trunk, thus assisting the action of the great pectorals, and also participating in projecting the trunk both forwards and above, "Thus, that the bird may raise and direct itself in the air, all the muscles must contract themselves in the following manner: the clavicle and the omoplate being fixed by the trapezium, the rhomboid, the upper part of the great dorsal, the costo-scapular and the short clavicular, and the wing being partly unfolded, brought forward and raised by the action of the middle pectoral of the internal subclavian, the elevators of the humerus, of the coraco-brachial, and of the extensors of the anterior membrane of the wing, the bird springs into the air, completely expanding his wings. At the same time the great pectorals, the primary agents of the wings, of which the point is fixed in the humerus by the insertion of their respective tendon, contract suddenly; and, in consequence of the resistance which the air opposes to the movement of the wings, carry all their power to the sternum; by this intervention they cause the trunk to rise, and the wings, whose immediate depression is resisted by the atmospheric air, as we have just said, are nevertheless depressed by these indirect means.

"While all this is performed with extreme quickness, several muscles of the wing, besides, among others, the extensors of the tail, strive to extend the wing; but as the resistance of the air on the extremities of the plumage is very great, and this fluid opposing all rapid movement on their part, these muscles then direct their power against the sides of the trunk. Taking then their position on the bone of the wing, on the external side of the wing, and acting by their upper extremity, they extend the main wing-bone over the fore wing-bone; and as this action and that of the great pectorals occur at the same instant and in concert on each side of the trunk, the latter is forced up in a middle direction.

"Thus the combination of these various efforts impart to the trunk a force of projecting forward and ascending, by which it is propelled with the wings. This projection is evidently similar to the leap of other animals. The great pectorals then relax, and the wings immediately reascend, partly by the reaction of the air on their lower surface, and the descent of trunk, and partly by the action of the middle pectorals and their congeners, whose contraction, so to speak, continues during the flight.

"After having darted forwards, the bird remains for an instant unsupported by the air; this fluid then, by its reaction, repels and tends to raise it still higher than the leap alone could have done; and afterwards prevents it again falling as low as the point of departure.

"The ascension of the trunk is doubtless favoured by the internal air, which insinuates itself into every part of the animal, and which the latter has the faculty of retaining.

"This air, which is perhaps a light gas, being dilated and rarefied by great heat, not only is its specific gravity probably diminished, but it must also contribute to diminish that of the bird, by inflating it and supplying all vacancies during the flight.

"If the bird which descends precipitately fears to hurt itself on approaching the earth, it opens its wings and its tail, and takes several little leaps, which, diminishing the rapidity of the descent, permit it to alight gently on the earth.

"It is by the assistance of the tail that certain birds are enabled to descend with precipitation from a great height: by spreading the tail and closing the wings, they cause the action of the air to predominate on the hind-part of the body, which directs the fore-part downwards, and leaves it entirely to the influence of gravitation. The tail may strengthen the action of the wing by moving towards the same side."

To give some idea of the duration and continuity of motion in birds, and likewise of the proportion of time and space which their courses occupy, their swiftness has been often compared with that of quadrupeds in their greatest progressions, whether natural or forced. The stag, the rein-deer, and the elk can traverse forty leagues in a single day. The rein-deer, harnessed to a sledge, can make a journey of thirty, and continue this during many days in succession. The camel can travel 300 leagues in eight days. The horse, trained for the race, and chosen from among the lightest and most vigorous, can perform a league in six or seven minutes; but his speed soon relaxes, and he would be incapable of supporting a longer career, with the spirit and celerity with which he set out. An Englishman went seventy-two leagues in eleven hours and thirty-two minutes, having changed horses one-and-twenty times; thus the best horse can make no more than four leagues an hour, nor more than thirty leagues a day.

But the swiftness of birds is considerably greater than that of such animals. In less than three minutes we lose sight of a large bird; of a kite for example, which proceeds horizontally, or an eagle, which flies vertically, and the diameter of whose extent on the wing is more than four feet. From this we may infer, that the bird traverses more than a space of 4,500 feet in a minute, and that he can fly twenty leagues in an hour. He may then easily proceed at the rate of 200 leagues a day, continuing on the wing for only ten hours. This supposes many intervals in the day, and the entire night for repose.

Swallows, and other birds of passage, may thus proceed from our climate to the Line in less than seven or eight days. M. Adanson has seen and caught swallows on the coast of Senegal, which arrived there eight or nine days after their departure from Europe. Pietro della Valle says, that in Persia, the carrier-pigeon makes greater way in one day than a man on foot can in six. The story of the falcon of Henry II. is well known, which, pursuing with eagerness a smaller bustard at Fontainbleau, was taken the following day at Malta, and recognised by the ring which she bore. A falcon from the Canary Islands, sent to the Duke of Lerma, returned from Andalusia to the Isle of Teneriffe in sixteen hours, which is a passage of 250 leagues. It was stated by Sir Hans Sloane that, at Barbadoes, the sea-gulls proceed in flocks to a distance of more than 200 miles, and return again the same day. A course like this, of more than 130 leagues, sufficiently indicates the possibility of a voyage of 200; and it has been concluded, from the combination of such facts, that a bird of elevated flight can traverse every day four or five times as much space as the most agile quadruped.

The constant habit of living in the air, imparts to birds a knowledge of all the meteoric changes which take place in the atmosphere, of winds, of seasons, and of bad weather. "The kite," says the prophet Jeremiah, "knows his time in the sky." The turtle-dove, the stork, and the swallow, are equally acquainted with the period of their returns. All animated beings, indeed, not distracted by other cares, can presage the changes of temperature. This is even the case with man, and especially with those whose nerves, from nature or indisposition, have received any peculiar sensibility.

It is well known to sailors that birds may be observed with advantage. For when the divers and the sea-gulls retire to the rocks on rapid wing, and make the shores re-echo with their clamours, as if to warn their companions; when water-fowl parade the strand with apparent anxiousness; when the cranes, quitting their marshes, soar above the clouds, and the swallows fly in circles over the surface of the water; the prudent navigator should lower his sails, and anticipate the impending storm. In like manner, black legions of ravens beat the air with their wings, and the rooks clamour in the fields at the approach of rain. On such occasions, too, the heifer in the pasture snuffs in the air with elevated head; the frogs croak in the marshes; the ants bring back their chrysalises to the nest; and fishes come to the surface of the water to respire. All animals appear to presage the tempest; and it is thus that shepherds and labourers, constantly exposed to the atmosphere, divine all its variations by a sort of instinctive observation.

But on the return of fine weather, we see a total change of all these symptoms in animated nature. The birds which inhabit strands and shores no longer come to dry their plumes in the sun; the screech-owl no longer utters his funereal cries in the evening; the hawk circles in the pure azure sky; the smaller birds sport among the newly-budding leaves; the raven testifies his joy by sonorous croaking; and the cattle bound on the plains. It might even be imagined that birds possessed some knowledge of the future, and were gifted with a foresight superior to that of other animals; and it was, doubtless, from this idea that the ancient augurs, destitute of our barometers, observed them with so much care, and drew presages from their movements.

Of all the feathered tribes, however, marine birds appear to be the most sensible to these atmospheric variations. The importunate cries of the petrel and the albatross, and their uncertain flutterings near the rocks, indicate clearly the approach of the hurricane. Birds that suffer much from rains avoid them instinctively, and find, as speedily as they can, some place of shelter. All birds, except the aquatic races, are never better than in dry countries and seasons; multiplying, in such circumstances, with astonishing rapidity, as they do in the ardent climates of the tropics. Their whole organization is penetrated by the air, as a sponge imbibes water, and immersed in the vast atmospheric ocean which surrounds our globe, it must exert upon them a constant influence.

CHAPTER III.

RESPIRATION, DIGESTION, VOICE, AND SENSES OF BIRDS.

The lungs of birds, unlike those of mammalia, do not float freely in the chest, but extend down the spine, to which they are attached, and fill up the hollows between the ribs at their junction with the spine. They are firm in texture, and consist of distinguishable cells, filling not only the hollow bones with air, but also cavities and membraneous sacks, which are variously situated, but manifestly designed more completely to aerate the blood, and to increase the lightness of the body in the surrounding atmosphere. And thus—

> "The vital air
> Pervades the swarming seas and heaving earths,
> Where teeming Nature broods her myriad births;
> Fills the fine lungs of all that breathe or bud,
> Warms the new heart, and dyes the gushing blood:
> With life's first spark inspires th' organic frame,
> And as it wastes, renews the subtle flame."

In glancing at the organs of respiration and voice, it may be observed that, in birds, the upper aperture is at a considerable distance from the articulating parts. It is called the upper *larynx*, has its lips immoveable, and is not covered with an *epiglottis*. At the bottom of the *trachea* (T), the point at which it branches into two, to form the *bronchial* tubes (B B).

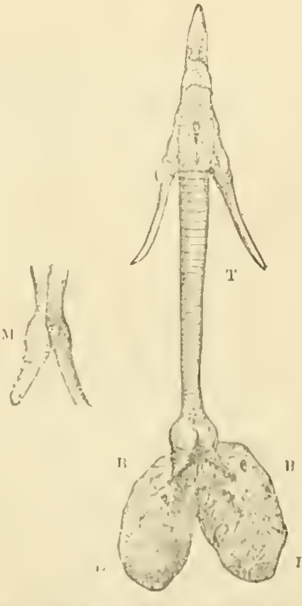

FIG. 18. ORGANS OF RESPIRATION AND VOICE.

which are represented entering the lungs (L L), and there is a piece of bone lying across, surmounted with a crescent-shaped membrane (M). On each side and below this piece of bone—at the origin of each bronchial tube—is an opening, the two lips of which are real, vocal chords. The first arch of the bronchial tubes is separated by a membrane from the last little bone which terminates the trachea. It is in this double drum, called the lower larynx, that the voice of birds is formed, by means of the complicated play of the numerous muscles which stretch or relax the vocal chords and the membranes of this wonderful apparatus. It may be easily understood that the enormous volume of air, contained in the whole body of the bird, powerfully contributes to the strength and range of the voice.

On the return of spring,—

> "Every copse
> Deep tangled, tree irregular, and bush
> Bending with dewy moisture o'er the heads
> Of the coy quiristers that lodge within,
> Are prodigal of harmony."

"In the nightingale and thrush," says Macculloch, "we distinguish a great number of sounds and articulations, because they belong or approach to that musical scale for which our sense of hearing is adapted. But we cannot doubt that, in these, and still more in birds whose tones are less musical and definite, there are sounds which we do not truly distinguish, and which we therefore neglect in favour of those to which we are more sensible. And there is no difficulty in believing that the song of a nightingale is better understood by itself than by us, or that it contains much more than we hear. If I were to suggest that it contains a definite set of phrases, with meaning to the animal itself and its kind, there would be nothing absurd in the proposition, since it possesses, even to our ears, a greater variety of articulation than we can find in any human language with which we are acquainted; while, in confirmation of this general view, all who have attended to such subjects must know, that where these birds abound, long debates are often carried on among them, in tones and articulations quite distinct from the ordinary songs. When we decide otherwise, we are deciding from a prejudice, or assuming that it is not a language, because we do not understand it. We should be equally justified in thus deciding as to the Arabic."

No wonder that our rustic poet Clare should say,—

> "I've often tried, when tending sheep or cow,
> With bits of grass and peels of oaten straw,
> To whistle like the birds. The thrush would start
> To hear her song of praise and fly away;
> The blackbird never cared, but sang again;
> The nightingale's pure song I could not try,
> And when the thrush would mock her song, she paused,
> And sang another song no bird could do.
> She sang when all were done, and beat them all."

For the melodies of the grove and the woodland, a special provision has been made in the organisation. The windpipe of birds is, in fact, very different in structure from that of other animals, and in song-birds it is peculiarly and admirably adapted to that sweet and varied music which affords us so much pleasure. Indeed, the whole extent of the windpipe in such birds may be considered as one vocal apparatus; the upper part being divided into two sections, or rather into two distinct organs. That which is more complicated, or in which the parts are more numerous and elaborate, is placed at the lower end of the windpipe, at the place where it divides, in order to be distributed through the lungs. The more simple, or that in which the parts are fewer, occupies its usual situation at the upper end of the windpipe, which, however, is destitute of the valve or lid, which is found in man.

With such a view of the vocal organs in birds, we may consider their lungs and windpipe as forming a natural bagpipe, in which the lungs constitute the pouch, and supply the wind; the windpipe itself forming the chanter or pipe; the lower or more complicated part being the reed or mouth-piece which produces the simple sound; and the upper part the finger-holes, which modify the simple sound into an infinite variety of distinct notes.

It has been remarked by Dr. Macartney, that "a very little comparison of the mechanism of wind musical instruments with the organs of the voice in birds, will show how nearly they are allied to each other; and it may be observed, that the sound produced by some of the larger birds is exactly similar to the notes that proceed from a clarionet or hautboy, in the hands of an untutored musician. The inferior glottis exactly corresponds to the reed, and produces the tone or simple sound. The superior larynx gives it utterance, as the holes of the instrument; but the strength and body of the note depend upon the extent and capacity of the trachea, and the hardness and elasticity of its parts. The convolution and bony cells of the windpipe, therefore, may be compared with the tunes of a French horn, and the divisions of a bassoon; and they produce the proper effects of these parts in the voices of those birds in which they are found.

When the food of birds requires insalivation, it is performed in the crop (fig. 19, c), a dilatation of the œsophagus copiously furnished with secreting follicles. In the rapacious birds this is absent, or very slightly developed. The second stomach is the one in which the gastric juice appears to be formed. This is thoroughly incorporated with the gizzard, G, which is a hollow muscle, furnished with a hard tendonous lining, where by the aid of little stones, gravel, and other hard substances, collected by the bird, the food is effectually ground down. In this process it is aided by the gastric juice, which is said to issue from another source, in the shape of an enlargement, not far distant from the gizzard. If we go to the roosting-places of birds, while they are asleep, and place the ear to their bodies, the grinding of the mill-like gizzard will be heard with the utmost distinctness, and it will be found doing its work with surprising energy. Other requisites are provided for perfect digestion, in its subsequent stages, as a liver, a gall-bladder and a series of intestines. In carnivorous birds all the receptacles are nearly united in one; a small thin muscle supplies the place of the gizzard, which is not required, as the food is easily digested. The remainder of the intestine exhibits little difference until it approaches its outlet; but in many of the graminivorous species there are two curious appendages, opening into the tube, the use of which is at present unknown.

The brain of birds (fig. 20) is much larger than that of creatures inferior in the scale of animal existence, filling up the whole of the cavity in which it is contained. The principal increase is manifested in the cerebral hemispheres, and these extend, not only laterally, but so far backwards as nearly to cover the optic lobes, which, as well as the olfactory ganglia, are proportionately reduced in size. The cerebellum now exhibits a greatly increased development, especially in birds of powerful flight, and those which remain long on the wing. Still the surface of the brain is not marked by convolutions; and the distribution of its fibres is very simple. The organ of vision is precisely adapted to the circumstances and necessities of birds. The substance of the eye is more hard and horny than it is in other instances, which compensates for the danger to which it is exposed by its unusual prominence. Thus endowed, as Audubon states, the pigeon is enabled, as it travels with great speed, so inspect the country below, and discover its food with facility. He observed, that when these birds traverse barren rocks, they keep high in the air, to descry distant lands; whereas, when the country is fertile, they fly lower, to fix on the part most plentifully supplied with food.

"As soon," he adds, "as the pigeons discover a sufficiency of food to entice them to alight, they fly around in circles reviewing the country below. During their evolutions on such occasions, the dense mass which they form exhibits a beautiful appearance as it changes its direction, now displaying a glittering sheet of azure, when the backs of the birds come simultaneously into view; and anon suddenly presenting a mass of rich deep purple. They then pass lower over the woods, and are for a moment lost among the foliage; but again emerge, and are seen gliding aloft."

We find, therefore, in all such instances, a preparation for the extremes of long and short-sighted vision. Thus the bird of prey, at a greater elevation in the air, sees on the surface of the earth the mouse on which it determines to pounce. With the speed of an arrow it descends; and now it perceives its prey as distinctly as it did when so far remote. For as we draw out or press in the tube of a telescope, according to the distance or proximity of the object on which we are looking, so is there on the part of the bird an instinctive adjustment of the organ of vision. It contains, for this express purpose, what has been aptly called "a living sponge," filling and separating the parts between which it is placed when this is desirable; and allowing them to approach when their so doing is required.

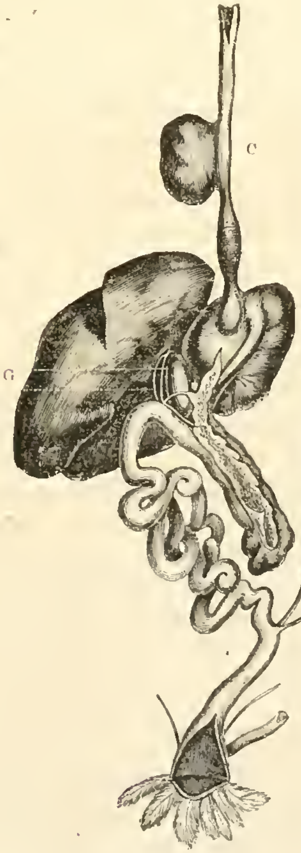

FIG. 19.—DIGESTIVE APPARATUS OF THE CHICKEN.

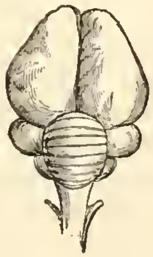

FIG. 20.—BRAIN OF A BIRD.

It would have been a puzzling problem for a skilful mechanic, had he been asked to design a mouth for a bird, which should assist in its flight, act as a hand to seize its food, and even tear it in pieces, and on occasion, serve as a weapon of defence. How many efforts must he have made to realise any approach to such complicated conditions! How far would his most successful result be distant from the bill of a bird!

And then, let it be remembered how the bill varies in structure, as in purpose. The bill of the domestic fowl has only to pick up its food, to arrange its nest, to preen its feathers, and occasionally to act as a weapon, but in the tribe to which this bird belongs great diversities may be easily detected, even in the bill. Still greater is the difference in other circumstances. Why, for instance, have the curlew, the plover, and the woodcock, such a length of bill? It is, that they may dig up the worms and caterpillars which lie far beneath the surface of the earth. Nor is this all; for each of these creatures, like all others resembling them, is provided with the means of distinguishing its prey, soft as it may be, even among the mud that is equally soft. "It is doubtful," says Macculloch, whose invaluable work abounds with similar facts, "if the most delicate human finger could feel the food of a woodcock where it lies. But there is even more of contrivance, if I mistake not, in this provision. The nerves are large beyond all apparent necessity; utterly disproportioned to a nerve of touch in any other animal body. It was necessary that the point of the bill should be tough and firm; and the magnitude of the nerves forms a compensation for this."

Other provisions are no less remarkable. The spoonbill appears expressly designed for gathering shell-fish. The small flexible strap, and the reflected arch of the avoset's bill prepare it specially for living on spawn. The oyster-catcher has an axe-shaped bill, that it may cleave the shells of the mollusks which are destined for its prey. The cross-bill is no less dexterous in plucking the scales from the fir-cones. And the shear-bill has that part of the structure consisting of two pieces extremely unequal, the lower mandible being long, and projecting far beyond the upper, into which the latter falls like the razor into its haft, that it may fly with its lower mandible cutting the water, and there readily capture the creatures intended for its food.

The horn, which invests the two mandibles, serves the place of teeth, and is sometimes prickled, so as to represent them. Its form, like that of the mandibles, is greatly diversified, according to the nature of the food of which each species partakes. The tongue has but little muscular substance, and, in the majority of birds, but little delicacy.

The organ of smell, hidden in the base of the beak, is very sensible. The size of the osseous openings governs the form of this part, and the various coverings, as cartilages, membranes, and feathers, which straiten these openings, have an influence on the strength of the smell, and on the sort of nourishment.

The semicircular canals of the ear are large, and lodged in a part of the skull, where they are surrounded on all sides with air-cavities. Night-birds alone have a large external ear, which is not so prominent as that of quadrupeds. This opening is generally covered with barbed feathers, more fringed than the others.

CHAPTER IV.

THE INCUBATION OF BIRDS.

Many will not hesitate to adopt the words of the poet :—

> "It wins my admiration
> To view the structure of that little work—
> A bird's nest. Mark it well, within, without :
> No art had he that wrought ; no knife to cut,
> No nail to fix, no bodkin to insert,
> No glue to join—his little beak was all ;
> And yet how neatly finished ! What nice hand,
> With every complement and means of art,
> And twenty years' apprenticeship to boot,
> Could make me such another ? Fondly, then,
> We boast of excellence, whose noblest skill
> Instinctive genius shames." *

The exquisite structures, which we shall hereafter illustrate, are attributable to the one essential particular which distinguishes the feathered tribes from the mammalia, in their being oviparous ; that is, instead of producing their young fully formed, they lay eggs covered with a hard calcarous shell, which contain the embryo, requiring a certain degree of warmth for its future development. This being duly applied—generally by the assiduous parent brooding over the nest—the young burst from their imprisoned state, and enter on a new existence. But here are various processes of great interest, on which it will be desirable briefly to dwell.

The egg-organ of a bird contains all the eggs which are to be laid during several years, among which differences are observable in substance, colour, and size. Those which are to be first laid, are largest and of a yellowish hue ; the others are gradually less in size and lighter in colour. At first, the egg appears as a small yellow globe, but it increases in size till it drops from its slender fastening, and falls into the egg-tube. Before it does so, it has neither white nor shell, and without the latter, eggs are sometimes laid from accident, or from the bird being in ill-health.

On falling into the tube, the egg has only a single and very thin membrane for a covering, but one that is a little thicker soon succeeds. This is produced by the egg exciting the vessels lining the tube to throw out a substance, which forms this second coating, jutting into small knobs at each end. As the egg passes along, it is also thickly covered with the white that fills the tube ; and proceeding onward, it obtains a third coating, which is the first layer of the membrane of the shell. Over this, the second layer is formed, and as the egg proceeds through the remainder of the tube, the shell is completed. The growth of an egg is exceedingly rapid ; and with the white and the shell it is particularly so.

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* Hurdis.

The eggs of the barn-door fowl are white; those of the nightingale of an olive-brown; and other great differences might easily be mentioned. As there are certain glands which secrete the general ground colour of a shell, so there are, most probably, others among them, which supply the additional colouring matter. It has been proved that the one only may remain, while the other is removed. Thus, the egg of a song-thrush has a bright blue ground colour, with irregular spots and blotches of black; but the latter have been preserved from the action of acid which has entirely discoloured the former; and this is only one instance among many, which might readily be given.

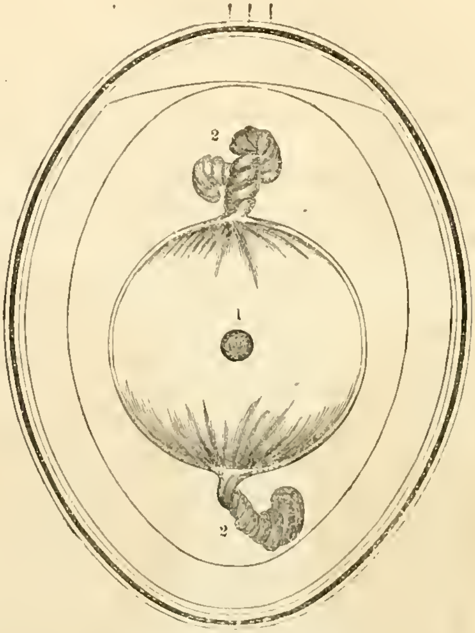

FIG 21.—SECTION OF A HEN'S EGG.

The egg of a bird is beautifully adapted to the process it has to undergo. Externally, this is the case: for its oval form permits a greater part of its surface to be in contact with the warm body of the parent, than any other with which we are acquainted; even that which approaches it most nearly—the form of a globe.

Internally, arrangements are equally perfect. For in an egg ready for incubation, a small spot may be observed on the yolk (fig. 21, 1), which, when examined, is apparently a vesicle, or bag, containing a fluid matter. In this then, the embryo swims, and as it is necessary that it should be, not at the cold bottom of the nest, but close to the breast of the mother-bird, an exquisite provision is easily discoverable.

The yolk of the egg is in fact a globe, and at its surface the little vesicle containing the embryo is precisely placed. Nor is this all. For were its axis through the centre, it would not move with the change in the position of the egg; but the axis is placed below the centre, so that it must turn round with every such change, whether the globe be heavier or lighter, than the surrounding white. Were it heavier, the embryo would fall to the lower part of the shell; but it is lighter, and therefore always rises to the upper surface.

Such important results are secured by the most appropriate means. On examination, two dense, tough cords appear (2), each of them being strongly attached to the yolk-bag. They then pass through the white, and are connected with the inner lining membrane at each end of the egg. Still more: a spiral filament runs through each of these cords. There are thus two fixed points on which the yolk can rotate; and the spiral filament, surrounded by thickened albumen, is, by its greater weight, always inclined to the lowest point. And, to perfect this beautiful arrangement, the elasticity of these spiral cords is so nicely adapted to the force by which the yolk is borne up as to restrain it at a certain point, and allow sufficient space between the yolk and inner lining of the shell for the white to lubricate the surface of the yolk, and thus to defend the embryo from injury.

Various, indeed, are the situations in which the mother-birds pass through this remarkable process. Our chief knowledge of incubation arises, however, from the attention that has been given to the domestic hen, and the results, therefore, we proceed to notice.

A considerable alteration takes place in the eggs a few hours after the hen has been brooding over them. The form of the embryo changes; it acquires length, and its progress is seen by a blood-vessel issuing from either side, branching into numerous smaller ones, which unite at their termination, and become a boundary on the covering of the yolk (fig. 22). In the centre of this net-work of vessels is the embryo, and as it increases, so do they multiply, until they nearly pervade the membrane of the yolk. It appears that when these vessels are first formed, and probably before, each branch is accompanied by a vessel carrying yolk into the body of the chick, that there may be a due supply for its sustenance and growth.

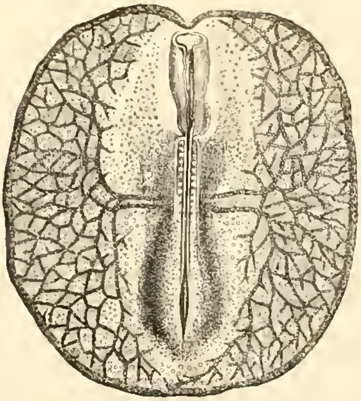

FIG. 22.—FORMATION OF THE VESSELS, AND DEVELOPMENT OF THE CHICKEN.

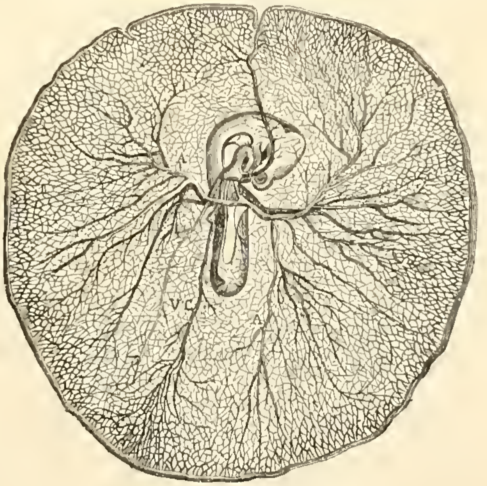

FIG. 23.—THE EGG ON THE THIRD DAY.

The vascular tissue which is to suffice for the primitive circulation, is a circular net-work, in the centre of which is a bent and palpitating vessel; this vessel is the heart (fig. 23, A). The whole net-work is bounded by the primigenial vein (V P), V C is the caudal vein.

The vascular net-work, the seat of this primitive circulation, may be regarded as a lung which the embryo exhibits above it, and which is found placed in that part of the egg where the oxygen can penetrate the most easily; that is, below the air-chamber. It is a simple pulmonary circulation, analogous to that of fishes, and lasts about two days. Then begins a new circulation: the vascular net-work, deprived of its principal venous trunks, becomes almost unfit for the process of respiration, but its nutritive functions are more developed.

The yolk becomes flattened, and a portion of the white has penetrated the yolk-bag.

A vesicle is now so far formed as to have passed from the body of the chick to the lining membrane of the shell; and, as the embryo grows, so does this vesicle increase. It is full of blood-vessels—a living system of arteries and veins—carrying livid red blood from the body of the chick, and returning it of a bright red colour, perfectly fitted for every purpose it is designed to answer.

About the sixth day, the bare wings and legs of the chick may be fully seen; the eyes are large and prominent; the brain begins to acquire consistence, and, a little later, the beak opens for the first time. The additional growth of a few days shows the wings and the body covered with short feathers; and that which, a short time before, was a shapeless mass, has now form, proportion, and organic life.

So soon, however, as the beginning of the third day, the beating of the heart is perceptible, though no blood is visible. But only a few hours elapse, and two vesicles, containing blood, appear, one forming the left ventricle, the other the great artery. The auricle of the heart is now seen; and the writer will never forget the pleasure with which he first saw an egg at this stage of developing the chick, exhibiting, as it did, the course of the blood to the unassisted eye. If an egg be opened between the twelfth and thirteenth day, the pulses of the numerous blood-vessels will be seen propelling onwards their contents, and thus presenting a very remarkable and beautiful spectacle. About the fifteenth day, the yolk-bag begins to be received into the body of the chick, as is also the white.

As on the eighteenth day the faint piping of the little tenant of the shell is heard, respiration has already taken place. The vesicle, which had increased with the growth of the embryo, has continued to enlarge over the surface of the membrane of the shell, which now it entirely surrounds, thus forming an external covering to the yolk. The large blood-vessels which connect the chick with this membrane—any one of which, if left open, would prove fatal to the bird—begin to be sealed and shrink, and preparation is making for its escape.

The position of the chick is such as to occupy the least possible space. The head, which is large and heavy in proportion to the rest of the body, is placed in front of the belly, with the beak under the right wing. The feet are gathered up, like those of a bird trussed for the spit. The tip of the upper part of the bill is supplied with a thick, hardened, horny point; and with this it makes a mark within the shell, thus preparing it to be broken. And though the position of the bird is singular, and apparently uncomfortable, it is by no means cramped or confined; there is space enough for the head and neck to acquire sufficient force to break through the shell and to effect its escape.

The air-bag, placed at the large end of the egg, has often been noticed; and the question of its use as often debated. Mr. Towne, of Guy's Hospital, has thrown much valuable light on the process of incubation, and, in the course of it, on the air-bag, which, curiously enough, does not seem to vary in size, either with that of the egg or the bird. He observed that the lining membrane of the shell was much changed during incubation, and that, by the alterations that took place, he could tell how far the process was advancing successfully.

The floor of this reservoir of air, however, did not change; it remained thin and transparent; and Mr. Towne proved it to be a distinct membrane, unconnected with that of the shell. The use of this inner lining membrane, as he calls it, appears to be to hold the contents of the egg suspended within the shell, and thus protect the egg from being bruised, which might otherwise happen, were the egg put in motion. It acts to the chick, in fact, as a natural hammock which the sailor has suspended for a resting-place between the decks of a vessel; thus the little bird swings along with the movements of the shell, and is effectually preserved from all injury.

But what is the use of the air contained in this bag? The answer of this most intelligent observer is at variance with the opinion so commonly entertained, that the air was thus first supplied to the earliest-formed blood-vessels of the chick; for it appears not to come into use till the nineteenth day—which is within two days of the little bird leaving the shell — when great changes are taking place, the large vessels of the vesicle are to be set aside, and the function of respiration is to commence. From this time, therefore, the large vessels shrink and shrivel, and, at the end of the twenty-first day, they are detached from the body of the chick, and their remains are left in the shell when the bird has quitted it. It is also worthy of remark, that the distension of the lungs by air is the cause of the vigour so necessary in breaking the shell; and it may be added, as a curious fact, that the bag is not filled with atmospheric, but with a gas specially provided. If the larger end of an egg be punctured with the smallest needle, the embryo dies.

On examining the contents of an egg between the third and fourth day, Mr. Towne found on the lower part of the yolk, or that opposite the embryo, a white circular line, nearly the size of a half-penny. Continuing his inquiry, he observed the yolk-bag within this circle became clouded, stretched, and wrinkled, and one egg among many, in which the yolk-bag was ruptured within this circle, but the yolk had not lost its form, nor had the white passed through the opening. On removing the portion of the thick white which adheres to the lower part of the yolk-bag from a goose-egg of fifteen days, a great part of the contents of the bag immediately escaped. He now observed a natural opening in it, larger than a shilling, skirted by a vessel, which rendered the boundary of the opening so strong, that he could readily introduce his finger and withdraw it, which he did repeatedly, without its giving way.

It appears, therefore, that at the appointed time, the membranes of the yolk are rent at that part opposite to the embryo, through which the thin white passes and immediately mixes with the yolk, while the former sinks to the bottom, becomes more dense, and actually plugs up the opening. It next becomes surrounded by a vessel which contracts, thus reducing the size of the opening; and, as it does so, the thick white is received within the yolk-bag, until, in the hen's egg, the white has nearly passed into the yolk-bag, on the thirteenth or fourteenth day. The opening is now entirely closed, and a very small portion of slimy matter is all that remains without.

The manner in which the embryo is kept at the upper part of the egg, so that it may be near the breast of the mother, has already been noticed; but here another question arises: for as there is, at the period just named, a great change of circumstances, how is the chick *then* found at the upper part of the egg? Most probably, the thick white, sinking to the bottom, by its own gravity, causes the embryo, which is exactly opposite, to rise to the highest point.

On the nineteenth day, when the extrusion is about to take place (fig. 24), the organ which has supplied whatever was necessary for the nutrition of the chick, is not completely exhausted. The residuum is now drawn into the body, which is then closed up, the yolk entering the digestive tube.

On the twenty-first day, the bird, disengaged from all its protecting membranes, which have become dried up; already accustomed to pulmonary respiration, and with its first necessities provided for by the yolk, is ready to leave the shell. But the walls it could not break, were not the beak supplied with a film of carbonate of lime, so that it may be used as a hammer, and the escape effected.

The writer has heard the sounds of the chick hammering at the inner shell with its beak, but he has not been able to observe what Reaumur discovered, the little creature at work. The result of the early efforts of the bird is a small crack, which is usually nearer the larger than the smaller end of the egg. The membrane is rarely ruptured at first, even when the hard part of the shell is detached; and at this, that eminent naturalist observed a chick at work, not pecking it, but apparently, trying to make it thinner, by constant friction.

As the strokes are continued, the first cracks increase, always cutting the egg across, and fresh pieces of shell are driven off. Meanwhile, the chick turns on its body from left to right, doing so probably by means of its feet. The fracture varies in breadth in different eggs, and is even of different breadths in eggs of the same bird. The effect required is the separation of the hard shell, and then of the membrane ; but it is not produced by all chicks in the same time. Some complete it within an hour; others have been observed at work for several days together. The little creature should, however, take up the unconsumed portion of the yolk into its body—a provision which will suffice for twenty-four hours. If it makes its exit before this is done, the chick will die a few days after it is hatched.

All who have observed the hatching of chickens, are aware that some come forth from the shell before others. If, then, the first of the brood must immediately be fed, and the mother had to leave the nest in search of food, the remaining eggs would suffer injury for want of the necessary warmth, but the support yielded by the last portion of the yolk effectually prevents this evil.

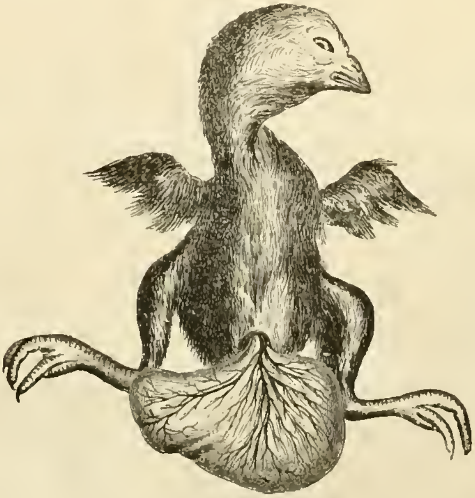

FIG. 24.— CHICKEN TWO DAYS BEFORE EXTRUSION.

The shells of eggs, it should be remarked, are nicely adapted in thickness to the strength of the chick, that is, to make its escape. The favourite cage-bird, the canary, could not break through a shell like that of a barn-door fowl ; and were the shells of tho domestic hen as thin as those of the goldfinch, they would all be crushed by her pressure. How much is there, then, to admire in this nice adjustment ! The shell, however, becomes more brittle by the process of hatching, and, at the same time, the lining membrane is partially separated.

Sometimes the fracture of a shell does not exceed three-fourths of the circumference ; but however this may be, the whole mass of the body is brought into action, the feet being used as a lever. By repeatedly pushing the body forwards, the chick gradually raises the upper portion of the shell, and, at length, tears off all its fastenings. Should any part remain, it becomes a sort of hinge, which allows the lid to fall on one side. It is sometimes found placed within the other portion, like one cup in another, and at others, it is thrown to a considerable distance. Thus the work of liberation proceeds till the brood is hatched ; and the young, in another way, become the objects of parental care.

CHAPTER V.

THE GROWTH OF A FEATHER.

Every bird, on quitting the egg, appears covered on all parts, except the under side, with a kind of down, consisting of minute filaments, collected into tufts, and resembling in their arrangement the fibres of a camel-hair pencil. Each tuft contains about ten or twelve filaments, growing from the upper ends of bulbous roots implanted in the skin. These are the rudiments of the organs that afterwards form the feathers, of which this down, serving the purpose of a first garment, hastily spread over the young bird, is but the precursor. The tufts generally soon fall off and disappear, except in the rapacious tribes, as the eagle and the vulture, where they remain attached to the feathers for a considerable time.

On our traveller, Bruce, laying hold of the monstrous carcase of a lammergeyer, or bearded vulture, which he had killed, he was not a little surprised at his hands being covered and tinged with yellow powder or dust. On turning the bird on his belly, and examining the feathers of his back, they also produced a dust the colour of the feathers there. This dust was not in small quantities; for upon striking the breast, the yellow powder flew out in much greater quantity than from a hairdresser's powder-puff, so commonly in use at that period; and the traveller was utterly unable to account for the fact.

Sonnini supposed this dust to be a remarkable singularity, or one of the multifarious modifications of nature; but it was only a simple effect of the moulting, which the bulk of the animal rendered more perceptible. This powder, in fact, came from the pellicle which envelopes the feathers of a bird at their first production, which follows at first their progression, being elongated with them, and finally dries up as the barbs shoot forth, and becomes divided into very fine light parcels, the quantity of which depends on the number of feathers which are developed at the same time. This pellicle is usually of the same colour as the feathers.

While a temporary defence is given by the downy covering, provision is being made to supply a raiment better adapted to the future wants of the bird. The apparatus by which the feathers are to be formed is gradually constructing; its rudiments are receiving the needed supply of nutrient juices, and of vessels for their circulation, together with their usual complement of nerves and absorbents.

When first visible, this organ has the form of a very minute cone, which rises above the cuticle, and is attached by a filament proceeding from its base to one of the papillæ of the skin, thus establishing its connexion with the living system. In a few days this cone has become a cylinder (fig. 1), with a pointed extremity, A, while its base, B, is united to the true skin by a more distinct bond of connexion formed by the enlarged vessels which are supplying it with nourishment. A white line is seen running the whole length of the cylinder, and another, exactly similar to it, is met with on the opposite side—the one corresponding to the front, and the other to the back of the stem of the future feather.

It is in the interior of this cylinder that all the parts of the feather are constructed ; their earliest rudiments being formed at the upper part of this organ, and the materials of the several parts of the feather being successively deposited and fashioned into their proper shapes in different places. For while the first laminæ are constructing in one portion of the cylinder, the next are only just beginning to be formed in another. While, too, the outer covering of the stem is growing in one membrane, the interior spongy tissue is deposited in other places, in various stages of softness or consolidation. Thus, the whole composes a system of operations, which, though they proceed on a microscopic scale, are, in fact, an extensive manufactory.

Fig. 2 shows the mould laid open longitudinally: it is composed of a sheath or capsule, and of a central pulpy mass called the *bulb*. The capsule consists of several membraneous layers, which are more consolidated near the apex, and become gradually softer and more delicate as they go towards the base, where their formation is only beginning.

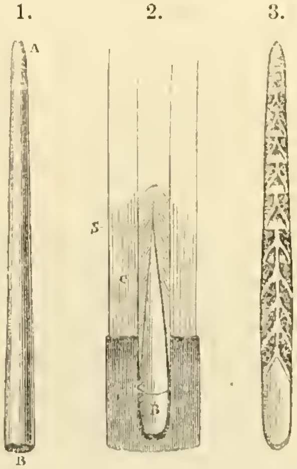

FIG. 25.—GROWTH OF A FEATHER.

The laminæ and their fibrils, the assemblage of which constitutes the vane of the feather, are the parts which are first formed. Their construction is effected in the space between the outer capsule, C, and the central bulb, B, in an exceedingly remarkable manner. Instead of growing from a base, like hairs, they are cast in moulds, where they harden and acquire the exact shape of the recipient cavities.

These moulds are formed of two membranes, the exterior one, E, enveloping the other. They are separated by a series of partitions, which commence at the edges of the long white band seen in fig. 1, and wind obliquely upwards till they reach the opposite longitudinal band already described. Thus they leave between them narrow spaces, which constitute so many compartments for the deposition, as in a mould, of the material of each lamina.

The proper office of the bulb, after it has supplied the materials for the formation of the laminæ, is to construct the stem of the feather, and unite the laminæ to its sides. The anterior part of the bulb, during the process of filling up the stem, exhibits a series of conical-shaped membranes, as is seen in the section fig. 3. The points of the cones are directed upwards, and their intervals being occupied by the spongy substance in different stages of consolidation, and are more perfected in proportion as they are situated nearer the apex of the stem.

As the construction of the feather proceeds from below, those parts which are completely formed are rising above the surface of the skin. They are still enveloped in the capsule which originally protected them, but its upper portions now decay, shrivel, and fall off in shreds. Thus the successive portions of the feather are allowed to come forth, and the laminæ to unfold themselves as they rise and assume their proper shapes. This successive evolution proceeds until the principal parts of the stem and the vane are completed, and then a different kind of action takes place.

The posterior part of the bulb now contracts itself, and bringing the edges of that surface of the stem closer together, at length unites them at the superior orifice, where the laminæ, which follow these lines, also terminates. Having thus performed its proper office, it ceases to be nourished, and is incapable of depositing a horny covering for the feather. All that remains of its substance is a thin membrane, which adheres to the outside of the barrel of the quill, and which must be scraped off before the latter can be used as a pen.

The tubular part is the product of the anterior portion of the bulb, which now ceasing to deposit the spongy substance, forms a transparent horny material over the whole of its external surface. As it retires to the root, however, it leaves a succession of very thin membranes, in the form of cones, which, when dried, form what is termed the pith of the quill. The last remnant of the bulb is seen in the slender ligament which passes through the lower orifice, and preserves the attachment of the feather to the skin. In due time this also decays, and the whole feather is cast off, preparatory to the formation of another, which is to replace it in its season. All the feathers are, in general, moulted annually, or at shorter periods; and the same complicated process is begun and completed by a new mould, produced for the occasion, every time a new feather is formed.

CHAPTER VI.

THE MIGRATIONS OF BIRDS.

STRANGE conjectures were long indulged with reference to the disappearance of some birds. Thus, it was alleged and believed that swallows lie concealed in fissures of rocks, in sand-banks, in the holes of decayed trees, and even at the bottom of the water in ponds, remaining during the winter in a torpid state. "It is certain," says Johnston, the Dutch naturalist, "that in hollow trees, lying many close together, they preserve themselves by mutual heat." Other authors relate that "upon cutting up a rotten oak tree, it has been found full of swallows." And the Hon. Daines Barrington says that the Rev. Mr. Conway, of Lychton, Flintshire, "on looking down an old lead mine in that county, observed numbers of swallows clinging to the timbers of the shaft, seemingly asleep; and on flinging some gravel on them, they just moved, but never attempted to fly or change their place."

A convincing proof that swallows do not become torpid in winter may be derived from those which have been successfully kept in cages. Dr. Reeves says he has known several attempts made to keep swallows in a warm room during winter without success, but M. Natterer, a celebrated continental naturalist, kept a number of swallows in cages for eight or nine years together; and in this country they have been successfully reared by Mr. Pearson.

"Five or six of these birds," says Bewick, "were taken about the latter end of August, 1784, in a bat fowling-net at night; they were put separately into small cages, and fed with nightingale's food; in about a week or ten days they took food of themselves, and seemed much strengthened by it; they were then put all together into a deep cage, four feet long, with gravel at the bottom; a broad shallow pan was placed in it, in which they sometimes washed themselves. One day Mr. Pearson observed that they went into the water with unusual eagerness, hurrying in and out again repeatedly with such swiftness, as if they had been suddenly seized with a frenzy. Being anxious to see the result, he left them to themselves about half an hour, and going to the cage, found them all huddled together in a corner apparently dead; the cage was then placed at a proper distance from the fire, when only two of them recovered, and were as healthy as before; the rest died. The two remaining were allowed to wash themselves occasionally for a short time only, but their feet soon after became swelled and inflamed, which Mr. Pearson attributed to their perching, and they died about Christmas; thus the first year's experiment was in some measure lost. Not discouraged by the failure of this, Mr. Pearson determined to make a second trial the succeeding year, from a strong desire of being convinced of the truth respecting their going into a state of torpidity. Accordingly, the next season, having taken some birds, he put them into the cage, and in every respect pursued the same method as with the last; but to guard their feet from the bad effects of the damp and cold, he covered the perches with flannel, and had the pleasure to observe that the birds throve extremely well; they sung their song through the winter, and soon after Christmas began to moult, which they got through without any difficulty, and lived three or four years, regularly moulting every year at the usual time. On the renewal of their feathers, it appeared that their tails were forked exactly the same as in those birds which return hither in the spring, and in every respect their appearance was the same." *

It has been, however, sagaciously conjectured by Dr. Forster, that those birds which have been found in a state of torpidity—in the crevices of rocks, in holes of old decayed trees, in ruined towers, and under the thatch of houses—had, owing to some accident, been hatched later in the year than ordinarily, and consequently had not acquired sufficient strength to undergo the fatigue of a long journey on the wing, at the time when the migration of the rest of their species took place; and that to shelter themselves from the inclemency of the weather, they had sought retreats wherein, from cold and hunger, they had sunk into a state of torpidity.

Burns pathetically asks—

"Ilk happing bird, wee helpless thing,
Which, in the merry months of spring,
Delighted me to hear thee sing,
What comes o' thee?
Where wilt thou cow'r thy chittering wing,
And close thy e'e?"

But, in a multitude of instances, the inquiry must remain unanswered. In the mode of migration, however, we know there is a great diversity. The males in certain cases travel first, and are afterwards followed by their mates and the younger branches of their families. Most birds perform their migrations during the night; but there are some that travel only by day, and others that fly onwards, unaffected alike by night or day. The owl, the blackbird, and a great number of aquatic birds, shun the light; while the crow, the pie, the titmouse, the wren, the woodpecker, the chaffinch, the goldfinch, the lark, the swallow, and some others, avail themselves of it. And as the heron, the wagtail, the yellowhammer, the stork, the crane, the plover, the swan, and the wild goose, do not intermit their flight, they choose a bright moonlight season to set out on their journey.

Of all migrating birds, the cranes may perhaps be considered the most remarkable. They seem to be most endowed with foresight, and have every appearance of consultation and regular preparation for the time of their departure. Several days before, they utter peculiar cries, and assemble with much noise and bustle. They then form themselves into two lines, making an angle, at the vertex of which, one of their number, who is regarded as the general director of their proceedings, takes his place. It seems, indeed, as if the office of the leader were to exercise authority, and issue orders to the whole party, giving the signal for their descent and feeding, and guiding them in inclement weather in their circling flight. The commands, and answers to them, appear to be given in piercing cries. If the leader grows tired, his place is taken by the birds next to him, while he retires to the end, and thus their orderly flight is directed.

The destination of some birds is no matter of doubt. In the year 1833, a Polish gentleman having caught a stork upon his estate near Lemberg, put round its neck an iron collar, bearing the inscription, *Hæc ciconia ex Polonia*, ("this stork comes from Poland,") and set it at liberty. In the following year, the bird returned to the same spot, and was again caught by the same person. It had acquired a new collar, of *gold*, with the inscription, *India cum donis remittit ciconiam Polonis*, ("India sends back the stork to the Poles with gifts.)" It is worthy of remark that the stork emigrates on the approach of winter, even when circumstances of climate or food cannot operate, or can operate but faintly, in inducing it to do so. Thus, at Bagdad, which enjoys an extremely mild winter, and where even a slight degree of frost is not usual, the stork regularly leaves the place upon the approach of that season.

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* "British Birds," i. 328.

In like manner, the quail, which in spring is diffused over all the temperate regions of Europe, is known to betake itself, in autumn, to the coasts of Africa, and to penetrate into Arabia and Persia. Though their wings are small, they cross the Mediterranean; they wait whole weeks for a favourable wind, reposing on every small isle; and hence they are taken by thousands on the Ionian isles and the coast of Asia. A sudden change of wind, however, causes numbers of them to perish in the waters. Swallows have been seen crossing the Mediterranean in autumn towards the African shores; but in reference to this bird, and many others, we are still left to say with the poet:—

"As fables tell, an Indian sage,
The Hindostani woods among,
Could in his desert hermitage,
As if 'twere mark'd in written page,
Translate the wild bird's song.

"I wish I did his power possess,
That I might learn, fleet bird, from thee,
What our vain systems only guess,
And know to what wide wilderness
You go across the sea."

A remarkable example of extensive migration is afforded by the passenger-pigeon of America, the history of which is given by Audubon, in his "Ornithological Biography:"—"The most important facts," he says, "connected with its habits, relate to its migrations. These are entirely owing to the necessity of procuring food, and are not performed with the view of escaping the severity of a northern latitude, or of seeking a southern one for the purpose of breeding. They consequently do not take place at any fixed period or season of the year; indeed, it sometimes happens, that a continuance of sufficient supply of food in one district will keep these birds absent from another for years. I know, at least, to a certainty, that in Kentucky they remained for several years constantly, and were nowhere else to be found. They all suddenly disappeared one season when the maize was exhausted, and did not return for a long period. Similar facts have been observed in other states.

"In the autumn of 1813, I left my house at Henderson, on the banks of the Ohio, on my way to Louisville. In passing over the Barrens, a few miles beyond Hardensburgh, I observed the pigeons flying from north-east to south-west, in greater numbers than I thought I had ever seen them before; and feeling an inclination to count the flocks that might pass within the reach of my eye in one hour, I dismounted, seated myself on an eminence, and began to mark with my pencil, making a dot for every flock that passed. In a short time, finding the task which I had undertaken impracticable, as the birds poured on in countless multitudes, I rose, and counting the dots then put down, found that 163 had been made in twenty-one minutes. I travelled on, and still met more the farther I proceeded. The air was literally filled with pigeons; the light of noon-day was obscured as by an eclipse; the dung fell in spots, not unlike melting flakes of snow; and the continued buzz of wings had a tendency to lull my senses to repose.

"Whilst waiting for dinner at Young's inn, at the confluence of the Salt-river with the Ohio, I saw, at my leisure, immense legions still going by, with a front reaching far beyond the Ohio on the west and the beech-wood forests directly on the east of me. Not a single bird alighted; for not a nut or acorn was that year to be seen in the neighbourhood. They consequently flew so high, that different trials to reach them with a capital rifle proved ineffectual: nor did the reports disturb them in the least. I cannot describe to you the extreme beauty of their aërial evolutions, when a hawk chanced to press upon the rear of a flock. At once, like a torrent, and with a noise like thunder, they rushed into a compact mass, pressing upon each other towards the centre. In these almost solid masses, they darted forward in undulating and angular lines, descended and swept close over the earth with inconceivable velocity, mounted perpendicularly so as to resemble a vast column, and when high, were seen wheeling and twisting within their continued lines, which then resembled the coils of a gigantic serpent.

"Before sunset I reached Louisville, distant from Hardensburgh fifty-five miles. The pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. The people were all in arms. The banks of the Ohio were crowded with men and boys, incessantly shooting at the pilgrims, which there flew lower as they passed the river. Multitudes were thus destroyed. For a week or more, the population fed on no other flesh than that of pigeons, and talked of nothing but pigeons. The atmosphere, during this time, was strongly impregnated with the peculiar odour which emanates from the species."

In view of the facts connected with these migrations, the question arises, Why are they undertaken? "It is not from want of nourishment," replies a naturalist, "for most birds commence their migration while there is still abundance in the country they are leaving. Atmospherical currents are not the cause, nor do the changes of season explain it, as the greatest number of them set off while the weather is yet fine; and others, as the larks and starlings, arrive while the weather is bad. Atmospherical influences can only hasten the migration in autumn, but must rather retard or derange it in spring. It is the *presentiment* of what is to happen which determines birds to begin their journey. It is an instinct which urges them, and which initiates them into the meteoric changes that are preparing. They have a particular faculty of foreseeing the rigours of the coming season; an exquisite sensibility to the perception of atmospherical changes which are not yet arrived, but are approaching."

Sir Humphry Davy, on the other hand, considers food to be one of the chief objects of these migrations. "Swallows and bee-eaters," he says, "decidedly pursue flies over half a continent; the scolopax or snipe tribe, in like manner, search for worms and larvæ—flying from those countries wherein either frost or dryness prevents them from boring—making generally small flights at a time, and resting on their travels where they find food. Hawks are seen in great quantities, in the month of May, coming into the east of Europe, after quails and landrails; and locusts are followed by numerous birds that, fortunately for the agriculturist, make them their prey."

Admitting, however, that there is truth in both these statements, we think there is another motive, and one which we cannot but regard as of no ordinary power. All young creatures particularly require compounded aliment, and God appears to have made, in every instance, provision for a supply of fitting nutriments. As birds have not the milky secretion of the mammalia, and as, unlike insects, they do not place their eggs where the future progeny will find subsistence, so they are prepared to seek what may be required in distant spots. To quote the words of Mr. Knapp, with which we heartily coincide:—"Every one who has made the attempt well knows the variety of expedients he has resorted to, of boiled meats, bruised seeds, hard eggs, boiled rice, and twenty other substances that nature never presents, in order to find a diet that will nourish them; but Mr. Montagu's failure in being able to raise the young of the cirl-bunting, until he discovered that they required grasshoppers, is a sufficient instance of the manifest necessity there is for a peculiar food in one period of the life of birds, and renders it probable that, to obtain a certain aliment, the swallow, wren, and others of the insect-eating and fruit-feeding birds, direct their flight to distant regions, and that this is the chief cause of their migrations."

CHAPTER VII.

THE CLASSIFICATION OF BIRDS.

The diversitiy in form and plumage of the feathered tribes presents, on a superficial observation, a maze of intricacy apparently insuperable. Hence the efforts that have been made for their classification, not, be it observed, as the ultimate object of attention, but as the means of making progress in the study of birds;—a key, in fact, to unlock the stores of this intereresting department of natural history.

Some persons have considered nothing more striking than *parallelism,* of which the engraving presents an example (fig. 26). It is composed of two series belonging to two classes of the same branch: the mammalia and the birds, which offer analogies long ago pointed out by Linnæus. The first two homologous types of each series are on the side of the mammalia a monkey, and on the side of the birds a parrot. Both stand at the head of their class, by the development of their brain; both are similar in their fruit-eating propensities, and in their capability of climbing; both, like the human species, use their limbs to carry their food to the mouth; both have powers of imitation: the one is favoured by similarity of structure, and imitates the gestures and actions of man; the other imitates the speech of man. They are represented climbing the same tree, and eating the same fruit.

The two following types, the panther and the falcon, both feed on living prey; both possess great tact for its discovery; both are provided with talons for seizing it; teeth for tearing it in pieces, and a short intestinal tube for its digestion. Both are remarkable for their ferocious appearance, their rapid movements, and their muscular vigour. Both are represented engaged in the same chase.

The two placed below are of an inferior order, living on carcasses and carrion: one is the striped hyæna, the other the vulture; both are as cowardly as they are voracious, and both prefer carrion already half-putrefied to any other food; both prowl about the neighbourhood of man's habitations, to devour in common the filth that spread around would generate miasma; both are represented tearing it from the same carcase.

The two next belong to insectivorous animals: one is the tupaia, the other is the starling; both seek their prey on trees.

The two next are granivorous animals: the field mouse and the sparrow.

The two next are animals of complex stomach, some feeding on mountain pasturages, as the antelope, the other the nepaul, the two horns of which offer the closest analogy to the antelope.

The others are the dromedary, ruminating, without horns, and the ostrich, with an enormous crop; both are herbivarous, and inhabit the desert.

The two last types are the seal and the penguin; both possess abortive members, as palmated fins, both plunging under the water to fish for their food.

The next engraving (fig. 27) offers illustrations of three parallel series taken from the birds. The first three are alike in the enormous volume of their beaks; the second have elongated, compressed, and pointed beaks, a little hooked at the extremity; in the third series the beaks are straight, conicle, and with equal mandibles.

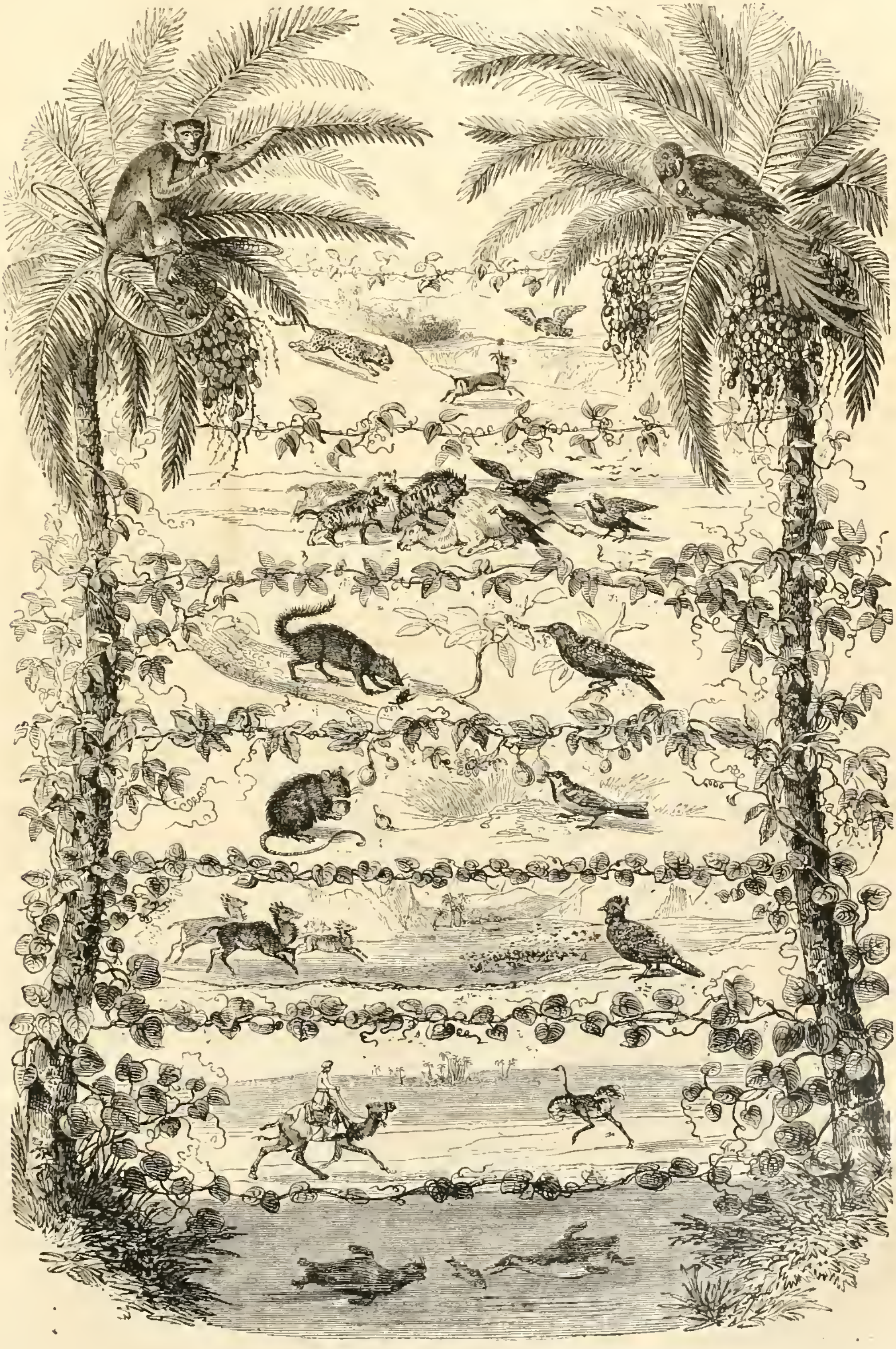

FIG. 26.—PARALLELISM OF MAMMALIA AND BIRDS.

In the engraving (fig. 28) the parallelism is more remarkable; it contains two series, formed from two very closely allied families. The swallows and the goatsuckers are distinguished from other birds of the same family by their large and deeply-cleft beaks. These are distinguished from one another in this, that the swallows have close plumage and are birds of day, while the goatsuckers have soft plumage and are night birds. A resemblance may also be traced in the claws of the birds thus compared.

Most justly was it long since remarked by Locke: "All the great business of genera and species amounts to no more than this, that men make abstract ideas, and, setting them in their minds with names annexed to them, do thereby enable themselves to consider things and to discourse of them, as it were in bundles, for the easier and readier improvement and communication of their knowledge, which would advance but slowly were their words and thoughts confined only to particulars." Again, he says: "The reason why I take so particular notice of this is, that we may not be mistaken about genera and species, and their essences, as if they were things regularly and constantly made by nature, and had a real existence in things, when they appear, upon a more wary survey, to be nothing else but an artifice of the understanding, for the easier signifying such collections of ideas as it should often have occasion to communicate by one general turn under which diverse particulars, as far forth as they agreed to that abstract idea, might be comprehended."

Nor less worthy of attention are the observations of Mr. Vigors on the same subject. "Though nature nowhere exhibits an absolute division between her various groups, she yet displays sufficiently distinctive characters to enable us to arrange them into conterminous assemblages, and to retain each assemblage, at least in idea, separate from the rest. It is not, however, at the point of junction between it and its adjoining groups, that I look for the distinctive character. There, as M. Temminck justly observes, it is not to be found. It is at that central point which is most remote from the ideal point of junction on each side, and where the characteristic peculiarities of the groups, gradually unfolding themselves, appear in their full development; it is at that spot, in short, where the typical character is most conspicuous, that I fix my exclusive attention. Upon these typical eminences I plant those banners of distinction round which corresponding species may congregate, as they more or less approach the types of each.

"In my pursuit of nature, I am accustomed to look upon the great series in which her productions insensibly pass into each other, with similar feelings to those with which I contemplate some of those beautiful pieces of natural scenery where the grounds swell out in a diversified interchange of valley and elevation. Here, although I can detect no breach in that undulating outline over which the eye delights to glide without interruption, I can still give a separate existence in idea to every elevation before me, and assign it a separate name. It is upon the points of eminence in each that I fix my attention, and it is these points I compare together, regardless in my divisions of the lower grounds which imperceptibly meet at the base. There, also, it is that I fix on the typical eminences that rise most conspicuously above that continued outline in which nature disposes her living groups. These afford me sufficient prominency of character for my ideal divisions; for ideal they must be where nature shows none. And there it is that I can conceive my groups to be at once separate and united; separate at their typical elevations, but united at their basal extremes."

Mr. Vigors then justly urges the analogy which may be derived from the course of the seasons, so different in their character and influence, and yet so difficult precisely to define and to separate. Of the phenomena of the several portions of the year, arising from the earth's annual revolution round the sun, every one is conscious, but "can any man," he asks, "point out the actual limits of these natural departments? Can he fix, for instance, in that intervening interchange of season, when the rigour of winter silently and imperceptibly relaxes into the mildness of spring—can he fix, I say, upon the exact period when the former terminates, and the latter begins? Can he assert, at one moment, that he is within the precincts of one season, and that, even while he speaks, he has passed into the confines of the other. He may, it is true, assign artificial

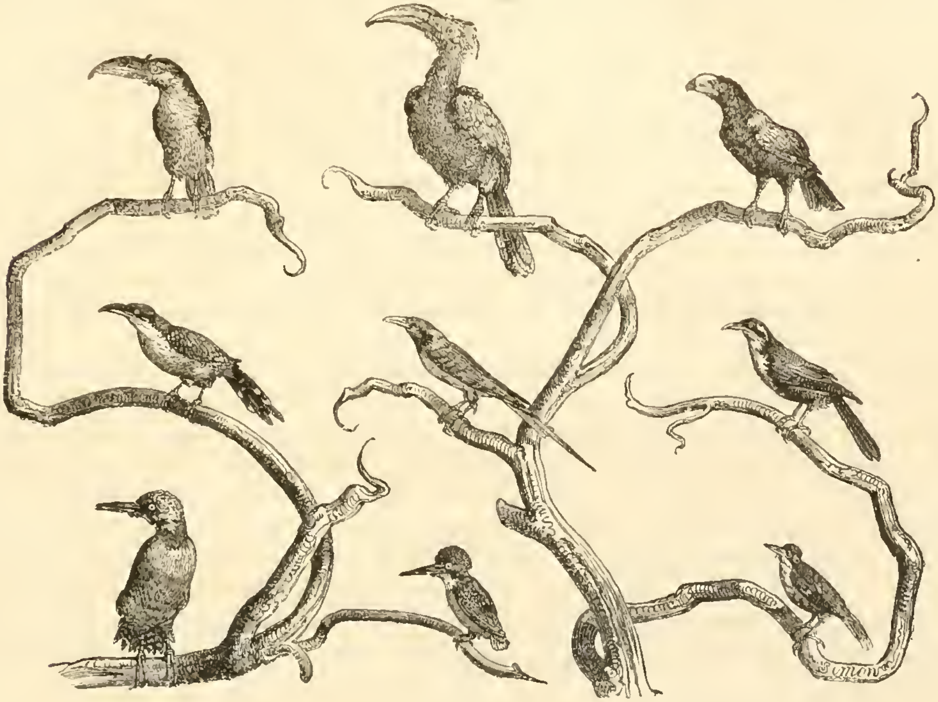
FIG. 27.

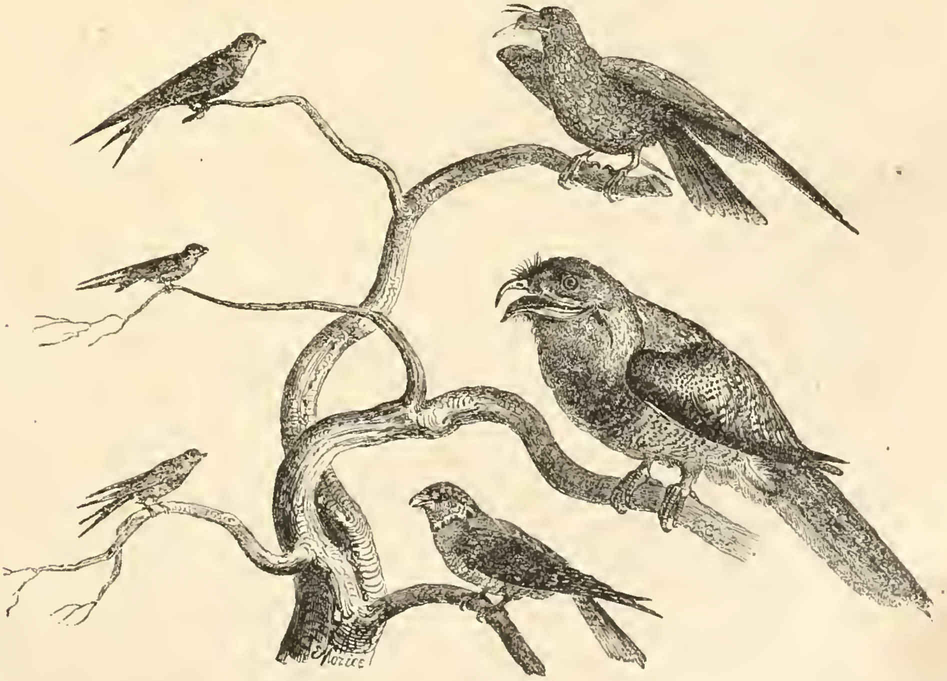
FIG. 28.

limits to each department, and may calculate, with mathematical precision, the months, the days, the hours, of which it consists. He may even assign reasons for his arbitrary divisions, and prove their probable approximation to the regular interchange of nature. And this is precisely as far as the zoologist can go. But this is all that is in his power. He never can feel or assert that the character of the season is lost at one particular moment, and gives place to the character of that which succeeds. Here, then, we have four decided divisions, perfectly distinct in themselves, yet to which we are unable to affix the limits. So it is with the groups of zoology. They exhibit separate divisions, distinguished by separate characters, but running into each other without any assignable limits; and any man may draw his imaginary line across that 'border country,' that 'land debateable,' which stretches between the conterminous regions, according as it suits his fancy or his peculiar views, or as it may accord with the greater or less preponderance of those minor landmarks which serve as an inferior mode of demarcation in the absence of all natural boundaries."

The first great groups into which birds are separated, are called ORDERS; and these vary, according to the arrangements of different naturalists, from sixteen to six. It is confessedly a difficult task to comprehend the multitudinous affinities of this portion of animated nature within the limits of any artificial system, though skilfully and carefully contrived. And it should be remembered that a system, however good, is of secondary, and not of primary, importance; the knowledge we are to seek, is that of the living creatures whom it arranges and classifies, and the palm of honour must be awarded to the naturalist who renders us the most effective service in making so valuable an acquisition.

The Orders, as they stand in the "Animal Kingdom" of Cuvier, slightly varied, will, we think, be sufficient for every purpose; they are six in number, and may be arranged as follow:—

I. ACCIPITRES.—The Rapacious Birds.
II. INSESSORES.—The Perching Birds.
III. SCANSORES.—The Climbing Birds.
IV. RASORES.—The Gallinaceous Birds.
V. GRALLATORES.—The Wading Birds.
VI. NATATORES.—The Swimming Birds.

With these general remarks on the feathered tribes, we proceed to present them more particularly before the reader's mind.

ACCIPITRES.

ORDER I.—THE BIRDS OF PREY.

In this order are included the feathered tribes known under the general names of vultures, eagles, hawks, buzzards, kites, and owls. They are distinguished by a strong, sharp-edged, and acutely-pointed bill, more or less curved, but always hooked at the extremity of the upper mandible, which is covered at the base by the membrane called the *cere*. The nostrils are generally open. With few exceptions, the legs are plumed as far as the top of the *tarsus;* the latter part is usually bare, but in most of the nocturnal kinds is entirely covered with feathers, and it is partially so in several of the diurnal. The toes are always four in number, very free in their movements, the outer sometimes versatile, and the whole, with rare exceptions, are provided with strong, sharp, curved, prehensile claws.

All raptorial birds feed on animal substances, the majority on living prey. Like lions and tigers among quadrupeds, they subdue the weaker tribes by force rather than subtlety, while they have a more extended range, including, as it does, not only the land but the waters; the verdant meadows, the umbrageous woods, the barren mountains, and the resounding shore. Surpassing strength and long endurance mark their power of flight. In some form or other, they occur under every clime, greatly varying, however, both in size and shape, from the finch falcon, which is scarcely larger than a sparrow, to the noblest eagle or the mighty condor of apparently resistless wing. But generally rapacious birds are of considerable bulk, as might be expected from the habits to which they are destined. Still, their forms are often graceful, their eyes bold and bright, and their actions energetic; their plumage, too, is often varied, though they are more remarkable for shades of intermingled black and brown, than for the brilliant and gorgeous hues which array such multitudes of the feathered tribes.

The notions of cruelty, rapine, and similar qualities, sometimes associated with the carnivorous tribes, are utterly unwarrantable. They may serve to embellish declamation and poetry, when sounding words are employed as a substitute for just ideas, but they are calculated only to mislead the understanding, and are denied a place in philosophical investigation. The eagle, for example, like other birds of the same order, subsists on flesh; and why? It is because the structure of his stomach and intestines precludes the use of any other food. Destitute of internal organs to reduce different aliment to a nutritive consistence, he fulfils the law of his nature, as the lion does among the mammalia. Nor do these carnivorous propensities constitute an exception to the grand code of the universe. God has ordained that life shall subsist on life; and however different are the modes of so doing, the principle, the object, and the result, are precisely the same. For are not the peaceful flocks and herds which graze on the plain, or browse on the mountain slope, the destroyers of life also? The insect races, no less than the feathered tribes, present many whose place may be properly assigned among the *carnivora* of animated nature. And even vegetation itself is sustained by what once existed; for lifeless matter cannot produce life, and never did a blade of grass, or an ear of corn, spring from the naked bosom of the primæval granite.

Seldom do rapacious birds associate with each other; yet still there is no reason for regarding them, as some naturalists have done, as consequently gloomy and mistrustful. We sympathise, on the contrary, with the question that has been proposed:—"What cause has an eagle, rejoicing in his strength, and winging his way from distant isles o'er waters glittering with redundant life, or hovering on the side of some majestic mountain, of which the purple heath is one wide storehouse of the best of game—what cause has he for gloom? Or why should he mistrust, whose sail-broad vans might almost carry him across the vast Atlantic, or, assuredly, in a few brief hours, transport him from his bold but barren eyrie to richer pastures, reverberating with the varied voices of defenceless flocks?" Happiness is largely diffused among the feathered tribes, and we see not why it should be withheld from the falcon or the eagle, any more than from the goldfinch or the linnet.

Usually the birds of prey may be said to dwell in single pairs, and, at times, in solitude. Precipitous rocks, ancient ruins, and occasionally forest trees, are the sites of their rude nests, while a few take up their stations on the ground. Seldom do they lay more than four eggs; many only rear a pair of young, which are at first extremely helpless, and covered for a time with down. In the generality of species, the females are considerably larger than the males. The plumage of the sexes often differs greatly, and in such instances the offspring, for one or more seasons, resembles the mother bird. The voice is almost always harsh and unmusical; it is sometimes more plaintive in the hooting kinds, complaining by night from ivy-mantled tower or aged tree; but only one species, a hawk from Africa, has ever been said to sing.

The FAMILY placed first in the ORDER of rapacious birds is that of the VULTURIDÆ, or Vultures.

Of all the characters drawn from the anterior portion of the body in the vulture tribe, the most distinct is the greater or less degree of nudity of the head and neck. Their front is inclined, half horizontal; and on the ground, to which they are much attached, their wings are pendant, and the tail is trailed along, so that the ends of the pen-feathers are constantly worn. Their flight is heavy, and they have considerable difficulty in taking their full soar. They are the only birds of prey that live and fly gregariously.

Vultures rarely attack living animals, unless they cannot satiate themselves on dead bodies. The hawks, falcons, and even the smallest birds of the same order, hunt their prey alone, almost all of them reject corrupted flesh, and disdain that which is dead. But vultures will attack a solitary enemy by numbers, and tear carcasses even to the very bone. Endowed with a sense of smell which is extraordinarily acute, the odour of corrupted flesh attracts vultures from a considerable distance. Flocks of them fly towards the prey, and all the species, like a savage horde, are admitted indiscriminately to the banquet. When pressed with hunger, they will descend near the habitations of men, and, like the fox among quadrupeds, commit ravages on the timid and defenceless tenants of the poultry-yard.

The vultures are more numerous in the southern than in the northern parts of the globe. They do not, however, dread the cold, and seek warmth in preference; for in our part of the world, they live in the greatest numbers on the highest mountains, and only rarely descend into the plains.

THE VULTURES.

THE CONDOR.*

The most celebrated species of the vulture tribe is the formidable Condor, whom an American poet (Mrs. Ellett) thus appropriately addresses:—

"Wondrous, majestic bird! whose mighty wing
Dwells not with puny warblers of the spring;
Nor on earth's silent breast—
Powerful to soar in strength and pride on high,
And sweep the azure bosom of the sky—
Chooses its place of rest.

Proud nursling of the tempest! where repose
Thy pinions at the daylight's fading close?
In what far clime of night
Dost thou in silence, breathless, and alone—
While round thee swells of life no kindred tone—
Suspend thy tireless flight?

The mountain's frozen peak is lone and bare,
No foot of man hath ever rested there;—
Yet 'tis thy sport to soar
Far o'er its frowning summit—and the plain
Would seek to win thy downward wing in vain,
Or the green sea-bent shore.

The limits of thy course no daring eye
Has marked;—thy glorious path of light on high
Is trackless and unknown;
The gorgeous sun thy quenchless gaze may share;
Sole tenant of his boundless realm of air,
Thou art, with him, alone.

Imperial wanderer! the storms that shake
Earth's towers, and bid her rooted mountains quake,
Are never felt by thee!
Beyond the bolt—beyond the lightning's gleam,
Basking for ever in the unclouded beam,—
Thy home—immensity!"

The name of this bird is derived from the Qquichua language, the general tongue of the ancient Incas. So rich is this language, that it has three neuter verbs which express to smell; that is generally, to smell well, and to smell disagreeably; and to the second of these it is traced by Humboldt, as there is "nothing more astonishing," he says, "than the almost inconceivable sagacity with which the condor distinguishes the odour of flesh from an immense distance."

The young condor has no feathers, the body being covered, for many months, with a very fine down, or a frizzled whitish hair. At two years old it is of a fawn-coloured brown; and up to this period the female has not the white collar, called by the Spaniards *golilla*, which is formed at the bottom of the neck by feathers longer than the others. For want of observing this difference, the naturalists of Peru, who discover, however, but little interest in ornithology, have spoken of two species, the black and the brown. At Riobamba, in the environs of Chimborazo and Antizana, the hunters are thoroughly acquainted with the effect of age on the form and colour of the condor, and to them we are indebted for an exact knowledge of its varieties.

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* Sarcorhamphus Gryphus.

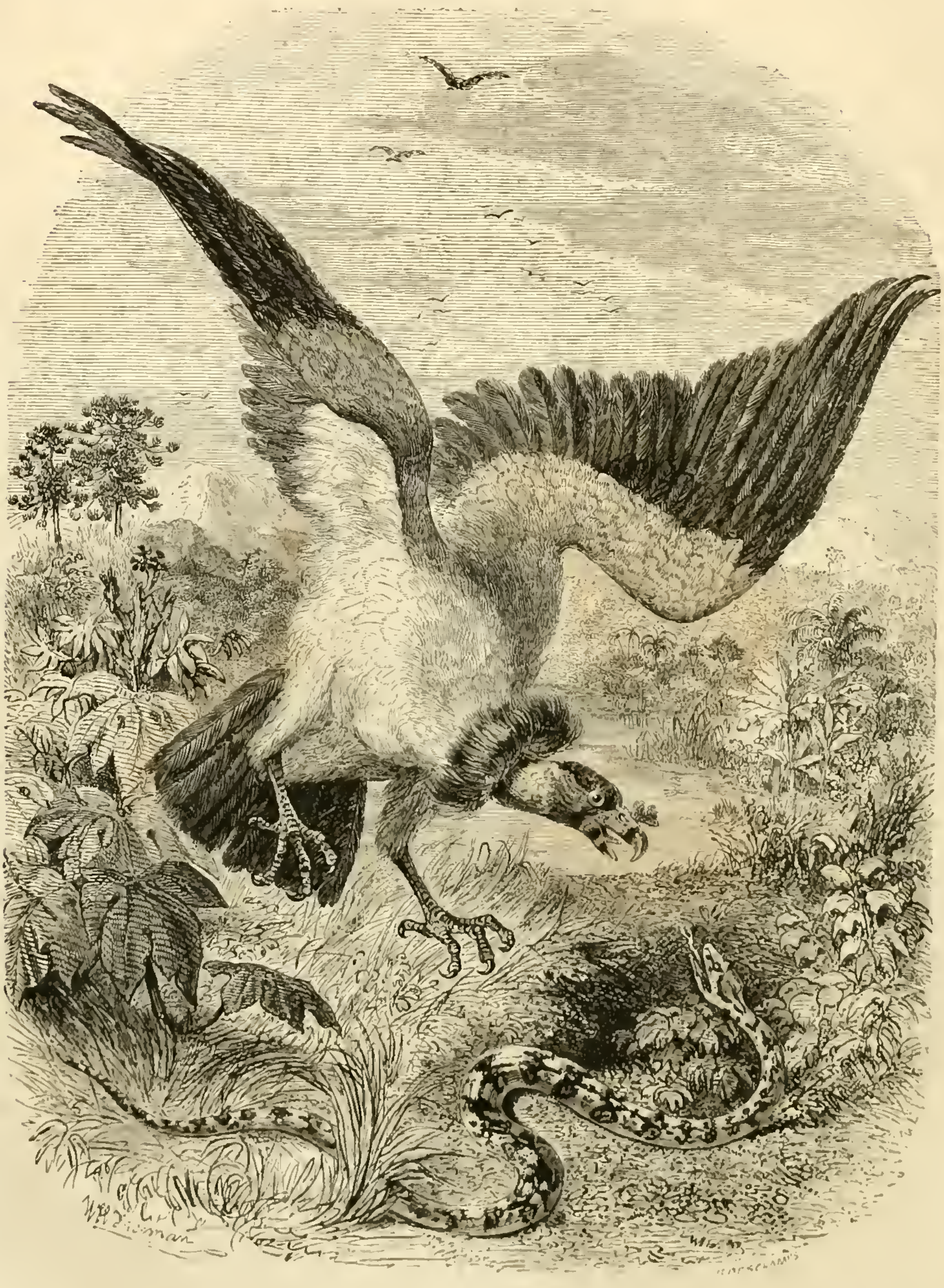
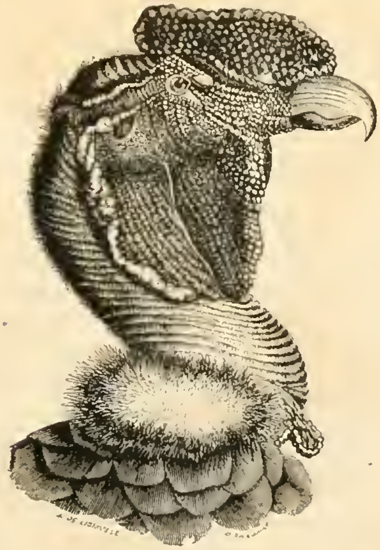


FIG. 29.—THE CONDOR.

The beak of the condor is straight in the upper part, but extremely crooked at the extremity. The lower jaw is much shorter than the upper. The fore-part of this enormous beak is white, the rest of a greyish brown. The head and neck are naked, and covered with a hard, dry, and wrinkled skin, which is reddish, and having, here and there, short, stiff, and brown or blackish hairs.

The fleshy, or rather cartilaginous, crest of the condor occupies the summit of the head and one-fourth of the length of the beak; but this is entirely wanting in the female. Unlike the cone of a cock, or the flabby cone of the turkey, it is very hard, coriaceous, and furnished with very fine vessels, but cannot be inflated. The eye is singularly elongated, very lively, and of a purple colour. The entire neck is garnished with parallel wrinkles, placed longitudinally, which arise from the habit of the condor of contracting its neck, and concealing it in the collar, which answers the purpose of a hood. The collar is formed of a fine silken down.

The rest of the bird, the back, wings, and tail, are of a slightly greyish black. Sometimes its plumes are of a brilliant black. They are of a triangular figure, and cover one another like tiles. The feet are very robust, and of an ashen blue, ornamented with white wrinkles. The talons are of a blackish colour, slightly crooked, and remarkably long. The four toes are united by a very flaccid, but easily perceptible membrane. The fourth toe is very small, and its talon most curved.



HEAD OF THE CONDOR.

FOOT OF THE CONDOR.

The size of the condor has often been greatly exaggerated. But it has been with this bird as with the Patagonians, and so many other objects of descriptive natural history,—the more they have been examined, the more have their enormous dimensions been found to diminish. The average length of the condor, from the point of the beak to the end of the tail, is but three feet three inches. Some individuals may have attained an extent of wings of fourteen feet, but this is attributable to a superabundant supply of aliment, or other accidental causes. Perched in the most solitary stations, often on the crest of the naked rocks which border on the lower bounds of the everlasting snows, and remote from every living being with which it is possible to compare him, the condor appears in contrast only with the azure depths of the horizon. Thus isolated, and with the large crest of the male condor, he seems much larger than he really is. Humboldt himself was long deceived in this way, during his visits to the desolate summits of volcanic regions. He believed the condors to be of a magnitude truly gigantic; and he was only convinced of the effect of this optical illusion by an exact measurement of the bird when dead.

The condor is peculiar to the immense chain of the Andes, the mountain range which runs along the whole west coast of South America; covering with its elevations, declivities, and valleys, about a sixth part of that continent. Some summits attain to between 15,000 and 16,000 feet above the level of the sea. Whenever Humboldt and his companion, Bonpland, were led, in the course of their botanical excursions, to the limits of perpetual snows, they were always surrounded by condors, three or four appearing on the points of the rocks. The birds exhibited no distrust, suffered themselves to be approached within a short distance, and seemed to have no inclination to make an attack.

Humboldt declares that, after the strictest research, he never heard a single example quoted of a condor having carried off a child, though its so doing has often been rumoured. Nothing is more common than to see the little children of the Indians sleeping in the open air, while their fathers are engaged in collecting the snow to sell it in the neighbouring towns, yet "who," he asks, "has ever heard of any of those children, thus surrounded by condors, having been attacked or killed?" De la Condamine, a writer of the highest credibility, relates that the Indians present to the condor, by way of bait, the figure of an infant, formed of very viscous clay, on which it immediately darts with a rapid flight, and in which its talons become so engaged that it is unable to extricate them. But that gentleman prudently adds the qualifying terms, "en prétend." The beak and talons of the condor are doubtless of the most enormous force; yet the Indians who inhabit the Andes of Quito are unanimous in affirming that this bird is not dangerous to man.

Preferring, as it does, the mountain solitudes, the condor selects small groups of rocks, and platforms towering to an immense height, which bear the names in the Inca language of watch-towers, as its brooding-place. Yet, though of all animals it is the one that removes to the greatest distance from the surface of the globe, hunger will sometimes induce it to descend into the plains, and more especially into those which border on the mighty chain of the Andes. Condors are to be seen even on the shores of the Southern Ocean, especially in the cold and temperate latitudes of Chili, where the range of the Andes may be almost said to border on the margin of the Pacific. But it only sojourns for a few hours, in these lower regions; speedily does it wing its flight to the mountain solitudes, and respire again a highly rarified atmosphere.

Humboldt was assured that the condor builds no nest; depositing its eggs on the naked rock, without surrounding them even with straw or leaves. The eggs are said to be altogether white, and from three to four inches in length. The female is reported to remain with her offspring for the space of an entire year. The condor is remarkable for strength and audacity. Two of them will dart on the deer of the Andes, the puma, the vicunna, and the guanaco. They will even attack a heifer; pursuing it for a long while, wounding it with their beak and talons, until the animal, breathless and overwhelmed with fatigue, thrusts out its tongue, bellowing. The condor then seizes the tongue, which is a favourite morsel, and the victim beneath its assault sinks to the earth and slowly expires. In the savannahs of Antisana, bulls are constantly found which have been wounded in the back by condors.

Satiated with food, the condor remains perched on the summit of the rock, with an air of sombre and sinister gravity, and will not give himself the trouble to escape the chase. But stimulated with hunger, he soars to a prodigious height, and hovers in the air, that he may survey the vast extent of country, some part of which is to yield his next banquet. At such times the sky will be observed to be peculiarly serene, as if the condor availed himself of the transparency of the atmosphere for his far-extended survey, and knew that in duskier weather it would be concealed from his piercing view.

The following adventure is given us by Sir Francis Head:—"In riding along the plain, I passed a dead horse, about which were forty or fifty condors; many of them were gorged and unable to fly; several were standing on the ground devouring the carcase; the rest hovering above it. I rode within twenty yards of them; one of the largest of the birds was standing with one foot on the ground, and the other on the horse's body; with a display of muscular strength as he lifted the flesh, and tore off great pieces, sometimes shaking his head, and pulling with his beak, and sometimes pushing with his leg.

"Got to Mendoza, and went to bed. Wakened by one of my party who arrived; he told me that seeing the condors hovering in the air, and knowing that several of them would be gorged, he had also ridden up to the dead horse, and that as one of these enormous birds flew about fifty yards off, and was unable to go any farther, he rode up to him; and then, jumping off his horse, seized him by the neck. The contest was extraordinary, and the recontre unexpected. No two animals can well be imagined less likely to meet than a Cornish miner and a condor, and few could have calculated a year ago, when the one was hovering high above the snowy pinnacles of the Cordillera, and the other many fathoms beneath the surface of the ground in Cornwall, that they would ever meet to wrestle and 'hug' upon the wide desert plain of Villa Vicencia. My companion said, he had never had such a battle in his life; that he put his knee upon the bird's breast, and tried with all his strength to twist his neck; but that the condor, objecting to this, struggled violently, and that also, as several others were flying over his head, he expected they would attack him. He said that, at last, he succeeded in killing his antagonist, and with great pride, he showed me the large feathers from his wings; but when the third horseman came in, he told us he had found the condor in the path, but not quite dead."

Sir Francis also says:—"When I was at one of the mines in Chili, I idly mentioned to a person that I should like to have a condor. Some days afterwards, a Guacho arrived at Santiago with three large ones. They had all been caught with a noose, and had been hung over a horse; two had died of galloping, but the other was alive. I gave the Guacho a dollar, who immediately left me to wonder what I could do with three such enormous birds."

Humboldt mentions an extraordinary instance of vitality in a condor which some Indians at Riobamba had taken alive. They first strangled it with a lasso, and hanged it on a tree, pulling it forcibly by the feet for several minutes; yet scarcely was the lasso removed, when the bird arose and walked about, as though nothing had occurred to affect it. Three balls were then discharged from a pistol, at less than four paces, all of which entered its body, and wounded it in the neck, chest, and abdomen; it still, however, kept its legs; another ball now struck its thigh, and it fell to the ground, but it did not die of its wounds till half an hour afterwards.

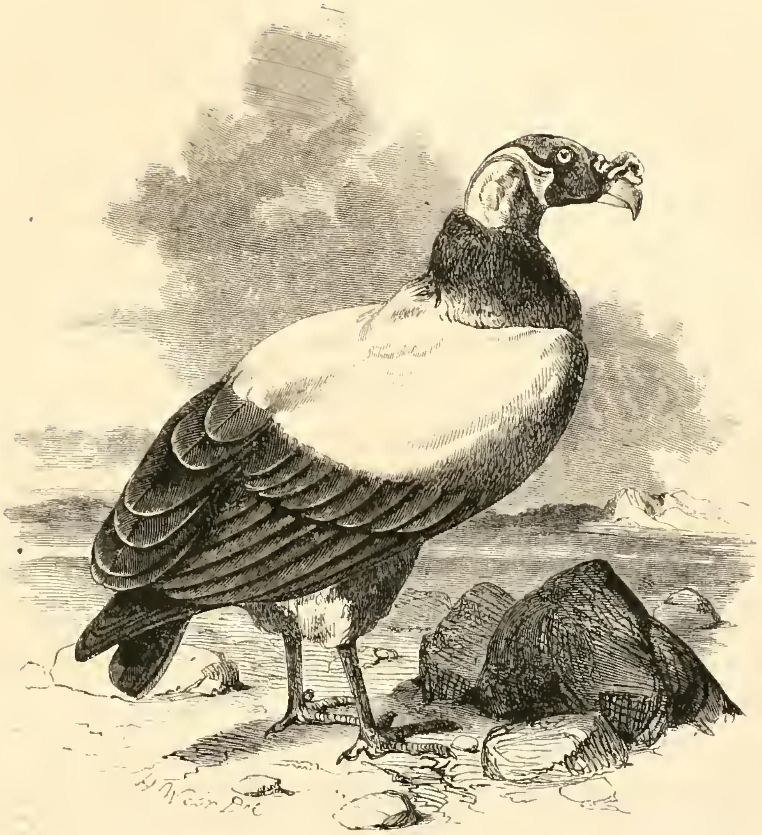
Condors have been, and may still be, observed in the gardens of the Zoological Society. Among the incidents of the history of one pair, we have the following, from the graceful pen of Mr. Broderip:—

"On one occasion, I saw the condors with a newly-laid white egg, some three or four inches long, lying on the naked floor of their prison. There was no appearance of a nest of any kind, and there was something melancholy and yet ludicrous in the hopeless expression with which both the parents looked down at it. They regarded the egg and then each other, as if they would have said—if they could—'What are we to do with it now we have got it?' And the mutual answer of their forlorn eyes and dejected heads was, evidently, 'Nothing.'

"Well, at last it was proposed that as soon as another egg was laid it should be placed under a hen. Accordingly, on the 7th of May, 1846, at half-past seven o'clock, A.M. (I must be pardoned for being somewhat particular on such an occasion), the newly-laid egg was put under a good motherly-looking nurse of the Dorking breed, and as the colours of hens as well as horses are worthy of note, let it be remembered that her colour was white inclining to buff.

"The place of incubation was a cage elevated some distance above the floor in one of the aviaries. The hen sat very close. Day after day, week after week, passed away; still the excellent nurse continued to sit. Day after day, week after week, again rolled on, and the usual period at which the anxious feathered mother beholds her natural offspring was left far behind. Still the good nurse sat on, till at last, after an incubation of *fifty-four* days, the young condor, on the 30th of June, about six o'clock in the morning, began to break the wall of its procreant prison. The process of hatching was very slow. The young bird was not extricated from the egg until after twenty-seven hours, nor was it then released—on the morning of the 1st of July—without the assistance of the keeper, who found it necessary to remove the shell, as the membrane had got dry round the nestling. Thus came into this best of all possible worlds, the first condor hatched in England. It had an odd appearance, and seemed to wonder how it had got here. The head appeared to be mis-shapen, for on the top of it was what looked like an amorphous bladder of water, contained between the external skin and the skull. This gradually disappeared, and when I first saw it, on the 1st of July, about four o'clock in the afternoon, the head was properly shaped. It was naked, and of a dark lead colour; and such was the hue of the just visible comb (showing that it was a male), and of the naked feet. With these exceptions the young bird was covered with a dirty-white down, and looked healthy and vigorous. On the evening of the day on which it was hatched, it ate part of the liver of a young rabbit."

Unhappily, however, as the careful naturalist notes, the young condor died in about three weeks.



THE KING VULTURE.*

The king vulture† is a South American bird, and is found in Peru, Brazil, Guiana, Paraguay, and Mexico. At the mature age of four years, it has been minutely described by D'Azara. The beak is straight for about one-third of its length, then very much curved, and surrounded at its base by a membrane which forms on each side as far as the eyes, a considerable sinking in, in which are situated the ample apertures of the nostrils. Between these is a sort of crest, which is neither elongated nor retreating, and which falls indifferently on either side; it is of a soft substance, and its extremity is formed by a remarkable group of warts.

On the head is a crown of naked blood-red skin. A bandelette of very short and black hair, extends from one eye to the other; below the marked portion of the neck is a very handsome sort of frill; some of the plumes of which are directed forwards, and some backwards, while it is so ample, that the bird, in drawing itself in, can conceal in it its neck, and a large part of its head. The remiges, and the large upper coverts of the wings, the tail, a trace on the back, the beak as far as the membrane, and the tarsi, are black. The membrane and the fleshy crest of the beak are orange; the naked skin of the base of the beak is purple; and the edges of the eye-lids are of a lively red. The naked portion of the neck is agreeably covered: it is carnation on the sides, purple below the head, yellow in front, and a blackish violet near the bands, and the wrinkles of the occiput. The iris of the eye, and all the rest of the plumage, are white. The total length of the bird is twenty-nine inches and a half; that of the fleshy crest is eighteen lines.

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* Sarcorhamphus Papa.

† V. Papa.

Waterton states, that while sailing up the Essequibo, he observed a pair of king vultures sitting on the naked branch of a tree, with about a dozen of the common species, waiting to begin the feast on a goat which a jaguar had killed the day before and been obliged to abandon; but though tolerating the company of its inferiors, the royal bird appeared to guard its privileges with jealous care.

On another occasion, the same distinguished naturalist directed the body of a serpent he had killed to be carried into a neighbouring forest, that it might tempt one of these creatures, and that he might watch the result. "The foliage of the trees," he says, "where we laid the serpent, was impervious to the sun's rays; and had any vultures passed over that part of the forest, I think I may say with safety that they could not have seen the remains of the serpent through the shade. For the first two days, not a vulture made its appearance at the spot, though I could see, here and there, as usual, a vulture gliding on apparently immovable pinions, at a moderate height, over the tops of the forest trees. But during the afternoon of the third day, when the carcase of the serpent had got into a state of putrefaction, more than twenty of the common vultures came and perched upon the neighbouring trees, and the next morning, a little after six o'clock, I saw a magnificent king of the vultures. There was a stupendous wurra tree close by, whose topmost branch had either been dried by time or blasted by the thunder-storm. Upon this branch I killed the king of the vultures, before it had descended to partake of the savoury food which had attracted it to the place. Soon after this, another king of the vultures came, and after he had stuffed himself almost to suffocation the rest pounced down on the remains of the serpent, and stayed there till they had devoured the last morsel."

THE AURICULATED VULTURE *

has the neck naked; the skin of the ears elongated, and the general plumage brown. This species takes its name from the remarkable projection of the skin round the ears, and which is also continued to some little distance down the neck on each side. It is a very large bird, being three feet high, and measuring ten feet from tip to tip of the outstretched wings. Its general colour is brown; but the throat is black, and covered with coarse hairs. It is a native of the southern parts of Africa and of the East Indies; and contrary to the nature of the fiercer birds of prey, it is of a gregarious disposition, being often seen in large flocks, and sitting in great numbers about the caverns of rocky mountains, in which it breeds. The nests, too, are often placed very near one another, each generally containing two, and sometimes three eggs of a white colour, and not disagreeable to the taste.

During incubation, the male watches before the entrance of the cavern in which the female sits, and may be regarded as a certain indication of the nest; but this last is usually of very difficult access. "However," says Levaillant, "I have sometimes, with the aid of my Hottentots, surmounted all difficulties, and often risked my life, that I might examine the eggs of this bird, whose retreat is a sink of disgusting pollution, and contaminated by an insupportable odour. It is the more dangerous to approach these obscure recesses, because their entrance is beset with filth, and this always in a liquid state, by reason of the moisture produced by the water which incessantly oozes from the rocks, so that, by sliding on the points of these rocks, one runs the hazard of tumbling over hideous precipices, on the top of which the *oricous* preferably establish their abodes."

At sunrise, flocks of these birds may be seen perched at the entry of their gloomy habitation, and sometimes studding at intervals an entire mountain range. As an instance of their voracity, the author whom we have just quoted mentions, that having wounded one of them, when busily engaged on the carcase of a hippopotamus, the oricon still tore off morsels of its prey in its attempts to escape, and was encumbered with six pounds and a half of meat in its stomach. Embarrassed with this quantity of food, and detained by its wound and its gluttony, it allowed the traveller and his attendants time to come up with it, and to assail it with the butt-ends of their muskets. For a long time the bird defended itself with singular intrepidity, and seemed even to make some impression on the barrels of the fowling-pieces. It is only, however, in such cases of emergency that it displays real courage; for notwithstanding its great strength and dimensions, it is naturally indolent and sluggish, seldom attacking the weakest animals, provided it can gorge itself with their spoils, and the fragments of corruption.

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* V. Auricularis. Lath. &c.

THE AMERICAN, OR CARRION VULTURE.*

The specific designation is from the Brazilian *ouroud*, so that the expression, *Regina aurarum*, or *Queen of the Gales*, applied to this species by some of the elder ornithologists, proceeds on a misconception. The American vulture is blackish, with purple and green reflexions; the head and neck are red, naked, papillous, and wrinkled. It occurs throughout the continent of America; but is more common in the warmer parts of it. In Europe it mounts the Grison Alps, Silesia, Poland, and some other countries, but not Great Britain. It is also met with in Asia. Its length is about four feet and a half, and its average weight between four and five pounds.

In other regions these birds are seen in flocks of forty or fifty, perched on the cocoa trees; for they range themselves in files to sleep together, like poultry; and such is their indolence, that they go to roost long before sunset, and awake not till far on in the morning. In some regions of the torrid zone they haunt the towns in great multitudes, as Carthagena, for example, where they perch on the roofs of the houses, or even stalk along the streets, and are of infinite service to the inhabitants, as they devour all manner of filth and refuse. When food fails them in the cities, they seek for it among the animals of the adjoining pastures; and if an animal is unfortunate enough to have a sore on its back, they alight on it without ceremony, and attack the part affected, nor quit their hold until they have completed the creature's destruction. In some parts of South America, where the hunters kill beasts merely for the skin, vast numbers of these vultures follow in their train; and were it not for their assiduous voracity, the many flayed carcases exposed to the air would speedily generate disease. We need not wonder, therefore, that the Spanish and Portuguese dealers in hides should protect the carrion vultures, and allow them to feed with their dogs.

These birds likewise contribute to repress the multiplication of alligators, by preying on their eggs the moment they are consigned to the sand and left by the parent. Their sloth, foulness, and voracity are such as almost to exceed belief. Whenever they alight on a carcase which they can tear at their ease, they leave the bones as if they had been scraped with a knife, and they often continue feeding till they are incapable of flight. On the pressure of danger, however, they have been known to rid themselves of a burdened stomach by disgorging. In the month of October the female of this species lays two white eggs, slightly spotted with red. The young, on their exclusion, are covered with a white down, and their eyes are closed. The nest consists of an artless excavation in the ground, or of brushwood, on the borders of forests, without any regular distribution of materials.

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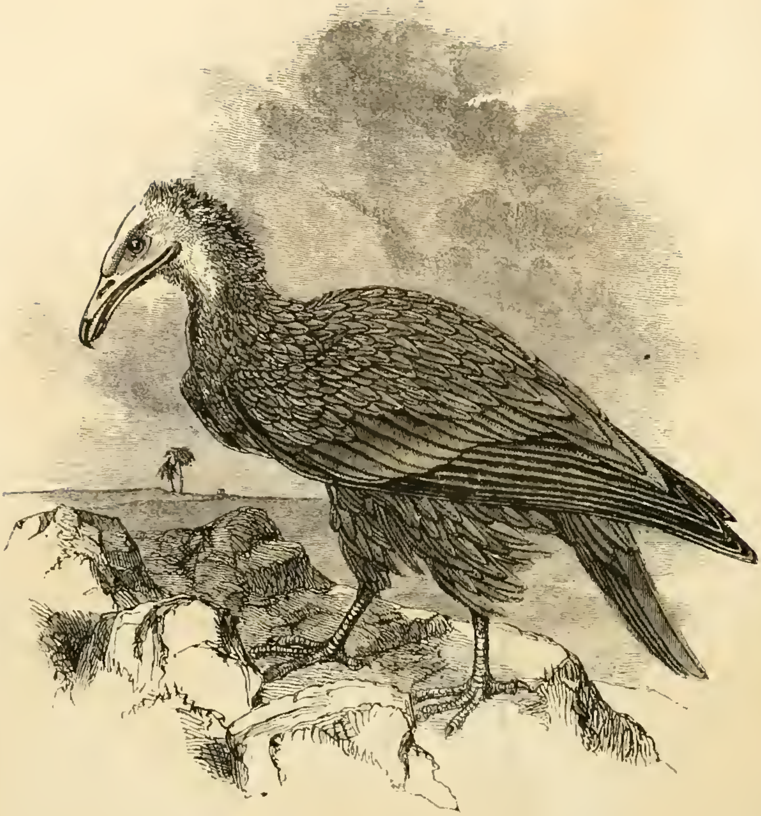
* V. Aura. Linn.



THE EGYPTIAN VULTURE.*

This bird is sometimes called "Pharaoh's chicken." It has a feeble, slender, elongated bill, the anterior part of the head and throat only being denuded of feathers. The nostrils are oval and longitudinal; the tail wedge-shaped. It is one of the smallest of the vultures, and little more than the size of a raven. It is spread over the whole of the hotter portions of the old world, from Spain to the east; throughout Greece, the islands of the Levant, Turkey and throughout the greater part of Africa, it abounds in immense flocks.

Sonnini tells us that these vultures are not ferocious in Egypt; they are to be seen on the terraces of houses, in the midst of the most populous and noisy cities, perfectly quiet, and living in complete security among men, who feed and cherish them with the utmost care. They also frequent the deserts, and prey upon the carcases of men and animals which have perished in these immense wastes, consecrated, as it were, for ages to nakedness, desolation, and sterility. Those which inhabit Egypt are not known to quit it, but some of the same species are to be found in Syria and Turkey; less numerous, however, because they do not enjoy the same prerogatives, nor is their existence protected in these countries by ancient superstition, as in Egypt: for they were considered sacred among the old Egyptians, whose opinions on this point, as on many others, have been transmitted to their successors, even to this day. In truth, they perform very considerable services to this country, in sharing with other birds, equally sacred in ancient times, the task of destroying the rats and reptiles which abound in this fertile and slimy region. They also clear away the carcases and filth, which would otherwise prove exceedingly injurious.

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* Neophron Perenopterus. Selby.—Egyptian Neophron. Gould.

THE BEARDED VULTURE.*

The lammergeyer is thinly scattered throughout all the great chains of Europe, as well as Asia and Africa, the terror of the flocks that graze on the declivities, or among the secluded valleys beneath. It habitually preys on the chamois, the wild goat, the Alpine hare, the marmot, and the lamb. It is from the latter animal being the frequent victim of this bird, that the Swiss peasants call it the lammergeyer, literally, the lamb vulture; but they sometimes extend the name to other large birds of prey.

Sailing in the air above the snow-clad summits of the stupendous Alps, it usually watches till the unwary chamois approaches the edge of a precipice, or traverses the pass of a narrow ledge, and then, sudden and impetuous as the avalanche of its native regions, it rushes down, hurling its victim into the abyss beneath, when, after making a few proud gyrations, as if to delight itself in its success, it plunges down to gorge itself on the yet quivering flesh.

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* Gypaetus Barbatus. Stow.

These birds, forming their nests in the clefts of rocks inaccessible to man, in the highest parts of the great chain of the Alps that separates Switzerland from Italy, have given rise to many tales which are unquestionably fabulous. It is even currently said, and believed among the peasants in those regions, to have carried off children to its nest; but such a catastrophe is barely possible.

One of these birds was seen by Bruce, the celebrated traveller, not far from Gondar, the capital of Abyssinia. He says that the inhabitants of that city call it *Abou Duch'n*, or Father Longbeard, from the tuft that grows beneath its beak. From wing to wing it measured eight feet four inches; and, when dead, from the tip of its tail to the point of its beak, four feet seven inches. It weighed twenty-two pounds, and was very full of flesh. Its legs were very short, but the thighs extremely muscular. Its eyes were remarkably small, the aperture being scarcely half an inch. The crown of the head was bald, as was also the front, where the bill and skull joined.

This noble bird was not an object of chase or pursuit, nor was it brought within reach by any stratagem. While the servants of the traveller were on the highest top of the mountain Lamalmon, refreshing themselves after its toilsome and rugged ascent, and enjoying the pleasure of a most delightful climate, eating their dinner in the open air, and having before them several large dishes of boiled goat's flesh, this bearded vulture suddenly appeared, not stooping gradually from a height, but flying slowly along the ground, and sitting down close to the meat, within the ring the men had made about it.

A great shout, or rather cry of distress, called Bruce to the place. "I saw," he says, "the eagle stand for a minute, as if to recollect himself; while the servants ran for their lances and shields. I walked up as near to him as I had time to do. His attention was fully fixed upon the flesh. I saw him put his foot into the pan, where there was a large piece in water, prepared for boiling; but feeling the smart, which he had not expected, he withdrew it, and forsook the piece that he held.

"There were two large pieces, a leg and a shoulder, lying on a wooden platter; into these he thrust both his claws, and carried them off; but I thought that he still looked wistfully at the large piece which remained in the warm water. Away he went slowly along the ground, as he had come. The face of the cliff, over which criminals are thrown, took him from our sight. The Mahometans that drove the asses were much alarmed, and assured me of his return. My servants, on the other hand, very unwillingly expected him, and thought that he had already more than his share."

A few minutes passed, and he returned, but only to perish. "I shot him," Bruce says, "with the ball of a rifle-gun, through the middle of his body, about two inches below the wing, so that he lay down upon the grass without a single flutter."

In its attitudes this bird resembles the eagles more than the vultures, its confident and upright bearing strongly contrasting with the crouching and suspicious postures of the latter. Like these, however, it generally retains its wings in a state of half expansion when at rest, and its neck more or less retracted within its shoulders.

The general colour of the upper part of this remarkable bird is a dull brown, with a mixture of grey; its wings and tail are of a greyish ash colour; the upper part of its head is of a dirty white; and the neck, breast, and other parts are white, with a shade of reddish brown or orange, which is deeper on the breast and throat, and gradually becomes less distinct on the abdomen and legs.

THE BLACK VULTURE.*

The black, or cinereous vulture is nearly the size of the griffon vulture, and sometimes larger. It has a collar of long, narrow, and bristling feathers; the naked skin of the head and neck is blue, and garnished with down; the beak blackish; and the long feathers of the leg sometimes descending sufficiently to cover the tarsus as far as the toes. In the first year, the plumage is varied with brown and dirty grey; and it is only in the fourth year that the down of the head and plumage is black.

According to Descourtilz, the black vulture, like the turkey buzzard, is respected at Charleston for the actual services which it renders, in removing, from the city and its vicinity, all dead animals and other refuse, on which these birds exclusively feed. If even a chicken dies, it is not long before its bones are actually picked clean. The vultures are occupied the whole day in making their rounds to discover carrion and offal, and coming down in legions, they mutually contend for the prey, which instantly disappears. They are so familiar, that they may be easily knocked down with a stick. "I had a great desire to obtain a specimen in this way," he adds; "but I was not disposed to pay five louis-d'or of penalty."

Wilson, with his usual graphic power, thus pictures an occurrence near Charleston:—"A horse had dropped down in the street in convulsions and dying; it was dragged out to Hampstead and skinned. The ground, for a hundred yards around it, was black with carrion crows; many sat on the tops of sheds, fences, and houses, within sight; sixty or eighty on the opposite side of a small inn. I counted, at one time, two hundred and thirty-seven, but I believe there were more, besides several in the air over my head and at a distance.

"I ventured cautiously within thirty yards of the carcase, where three or four dogs and twenty or thirty vultures were busily tearing and devouring. Seeing them take no notice, I ventured nearer, till I was within ten yards, and sat down on the bank. Still they paid little attention to me. The dogs being sometimes accidentally flapped with the wings of the vultures, would growl and snap at them, which would occasion them to spring up for a moment, but they immediately gathered in again. I remarked that the vultures frequently attack each other, fighting with their claws or heels, striking, like a cock, with open wings, and fixing their claws in each other's head. The females, and, I believe, the males likewise, made a hissing sound, with open mouth, exactly resembling that produced by thrusting a red-hot poker into water; and frequently a snuffling, like a dog clearing his nostrils, as I suppose they were theirs.

"On observing that they did not heed me, I stole so close that my feet were within one yard of the horse's legs, and again sat down. They all slid aloof a few feet, but seeing me quiet, soon returned as before. As they were often disturbed by the dogs, I ordered the latter home; my voice gave no alarm to the vultures. As soon as the dogs departed, the vultures crowded in such numbers, that I counted at one time thirty-seven on and around the carcase, with several within; so that scarcely an inch of it was visible.

"Sometimes one would come out with a large piece of the entrails, which, in a moment, was surrounded by several others, who tore it in fragments, and it soon disappeared. They kept up the hissing occasionally. Some of them, having their whole legs and head covered with blood, presented a most savage aspect. Still, as the dogs advanced, I would order them away, which seemed to gratify the vultures; and one would pursue another to within a foot or two of the spot where I was sitting. Sometimes I observed them stretching their necks along the ground, as if to press the food downwards."

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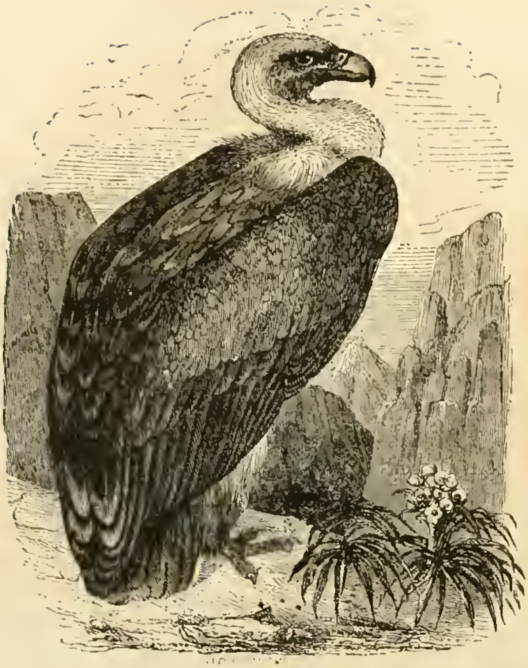
* Vultur Iota. Buonaparte.



THE GRIFFON VULTURE.*

This species, which appears in numerous flocks on the Alps and Pyrenees, abandons them in winter. It has been seen on the Table Mountain of the Cape of Good Hope, which it never quits, except during violent storms from the south-east. It has also been met with in Egypt and the Levant, in Spain and in the Tyrol. It is common in the neighbourhood of Gibraltar, abounds, during the winter, in Dalmatia, and has been observed to breed on lofty trees in Sardinia.

The griffon vulture is about three feet and a half in length, and eight from the tip of one wing to that of the other. Its head is covered with small and white feathers; but those of the occiput and nape form a tuft of about an inch long. The neck is almost naked; for the short and scanty down with which it is sprinkled does not prevent the brown and bluish tints of the skin from being visible. At the bottom of the neck some long feathers are arranged like a ruff of dazzling white. There is a large hollow, furnished with hairs, at the top of the stomach: this is the place of the crop. In addition to this external cavity, there is a lump internally, and a great enlargement in this part of the throat, which raises the skin of the external hollow, and distends it when the vulture has taken plenty of food. The feathers of the body are of a reddish grey; the quill-feathers of the wings and tail are black; the beak blackish, with a bluish tint in the middle; the iris is of a fine orange; the feet and claws are of a blackish hue.

The plumage of this vulture varies with age. In its first year the body is of a fawn colour; in the two following years, it is varied with grey and fawn, more or less deep above; and, in a more advanced age, it is entirely of a beautiful ash colour, which is nearly blue.

We now proceed to consider another FAMILY of the order of ACCIPITRES: it is that of the FALCONIDÆ. The subordinate groups into which it is divided are EAGLES, FALCONS, HAWKS, KITES, BUZZARDS, and HARRIERS.

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* Vultur Fulvus. Briss.

THE IMPERIAL EAGLE.*

As the lion is regarded as the king of beasts, so is the eagle the king of birds. These birds are monogamous; they ordinarily subsist on living prey, and never touch the dead except when ready to perish with hunger. Their admirable power of vision enables them to distinguish their prey at an immense distance; they rush upon it with the velocity of an arrow, tear it instantly, and unless its weight is unusually considerable, carry it off with their talons. The broad and flat nest constructed by the eagles between rocks and large trees is called an *eyrie.* The female usually lays two, and but seldom three eggs, which she hatches in thirty days. This nest remains, and except some accident should destroy it, it continues to answer the purposes of the eagle during life.

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* Aquila Heliaca.

With its proud air, elevated flight, strength of limb, and bold daring glance, it was so greatly admired by the ancients, that they called it the "Celestial Bird," and regarded it, in their mythology, as the messenger of Jupiter, and the bearer of his thunderbolts.

The figure of the eagle, in silver or gold, placed at the end of a spear, was the military ensign of Rome and of Persia. In heraldry the same figure has been adopted as the symbol of power, and the eagles of France and America are alike familiar.

Proudly conscious of his strength, the eagle disdains the smaller animals, and despises their insults. Intent on asserting his right of conquest, he will have no prey but that which he captures. His temperance is great, and he scarcely ever finishes the whole of his game, but leaves the fragments to other animals. Retired, like the lion, in some wilderness, he banishes every bird which might share his spoils, and when two pairs of the same species settle in a forest, they keep sufficiently apart to find ample sustenance in the place they have chosen, without interfering with each other.

The eagle is destructive to fish, and particularly so to salmon. These birds are constantly observed watching the fords in the spawning season, and seizing and carrying off the fish. One observer noticed that they chose a small ford upon the rivulet which connects Glencullen with Glandullah, and posted on either side, waited patiently for the salmon to pass over. Their watch was never fruitless; and many a salmon, in its transit from the sea to the lake, was transferred from its native element to the wild eyrie in the Alpine cliff, which beetles over the romantic waters of Glencullen.

Some years ago, a herdsman, while looking for a missing sheep on a very sultry day in July, observed an eagle posted on a bank which overhung a pool. Presently the bird stooped and seized a salmon, and a violent struggle ensued. On the herdsman reaching the spot, he found the eagle pulled under water by the strength of the fish, and his drenched plumage prevented his extricating himself. With a stone the peasant broke the eagle's pinion, and secured at once the spoiler and his victim; for the salmon was dying in the eagle's grasp.

The eagle, especially in a state of captivity, can go a long time without food. Buffon knew one of these birds, of the common species, which had been taken in a snare, to live forty days without any nourishment; and he showed no symptoms of exhaustion, except during the last eight days, at the end of which he was killed. It is a vulgar error to suppose that the eagle never drinks; when water is presented to him, he will drink like other birds, and also bathe in it his plumage. According to Spallanzani, the capacity of the crop to that of the stomach is as thirty-eight to three, which explains why a single repast will suffice the eagle for so many days. For if a large animal becomes his prey, he fills his crop, and as some portion of this nutriment passes, in due succession, from the crop into the stomach, digestion proceeds.

A gentleman, when shooting on Lord Sligo's mountains, near the Killeries, heard many particulars respecting the eagle, from a grey-haired peasant, who had passed a long life in these wilds. Hares had been there very abundant, and the scarcity which then prevailed he attributed to the rapacity of these birds; and he affirmed, that when in pursuit of these animals, the eagles evinced singular intelligence and tact. They coursed the hares, he said, with great judgment and certain success; one bird was the active follower, while the other remained in reserve, at the distance of forty or fifty yards.

If the hare, by a sudden turn, freed himself from his most pressing enemy, the second bird instantly took up the chase, and thus prevented the victim from having even a momentary respite.

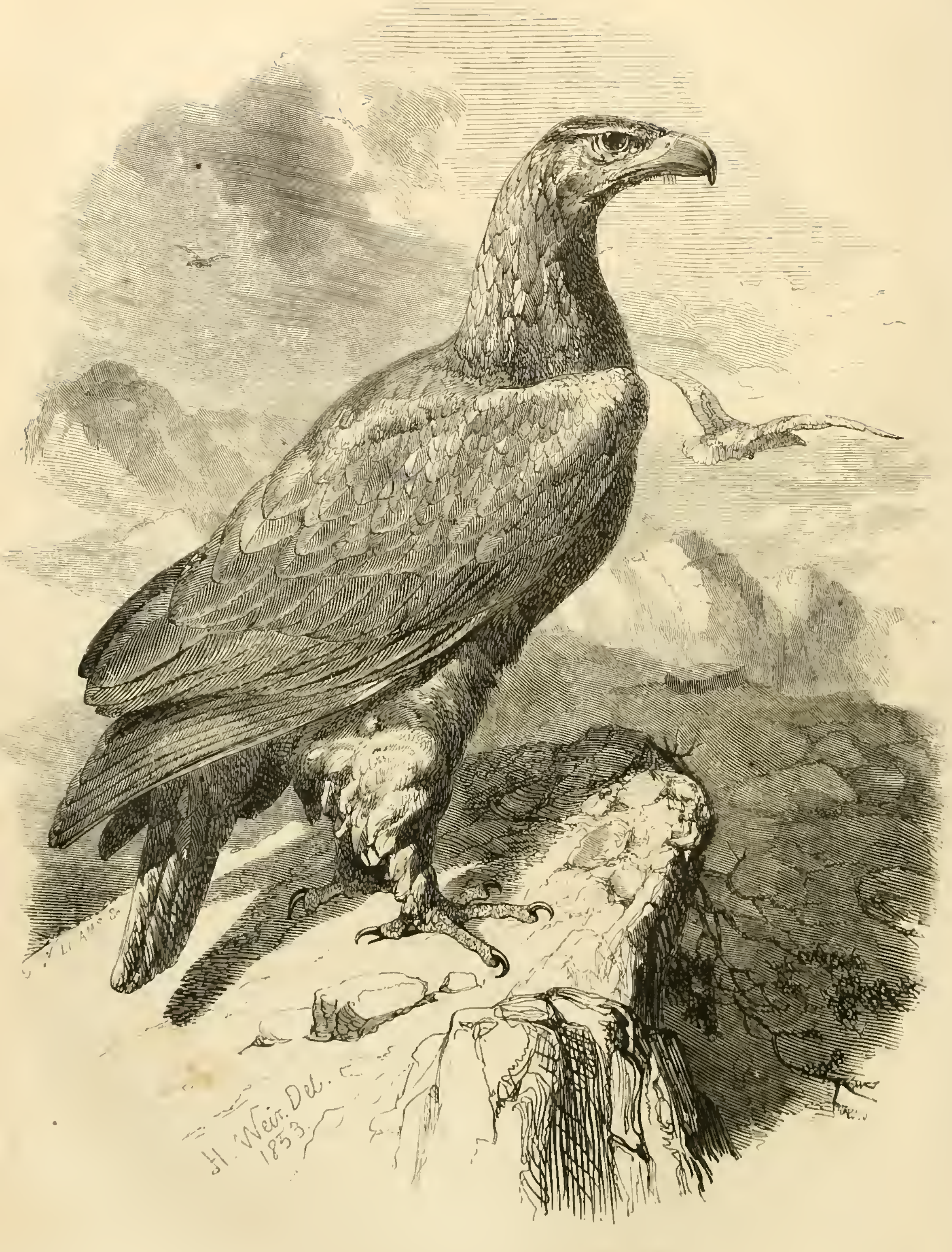
When De Thou, the historian, and M. Schomberg were passing through France on an embassy from Henry III. to the king of Navarre, they were entertained for some days at Mande, the seat of the bishop and count of Gevaudan. The visitors observed, with some surprise, at the first repast, that all the wild fowl or game brought to table wanted a head, a wing, a leg, or some other part, which occasioned their host pleasantly to apologise for the voracity of his caterer, who always took the liberty of first tasting what he had procured before it was brought to the table.

On perceiving the increased surprise of his guests, he informed them that in the mountainous regions of that district the eagles were accustomed to build their nests among the almost inaccessible rocks, which can be ascended only by ladders and grappling irons. The peasants, however, on discovering a nest, erected a small hut at the foot of the rock, in which to shelter themselves from the fury of the birds when they conveyed provisions to their young, and also to watch the times of their leaving the eyrie. On observing their departure, they instantly planted their ladders, climbed the rocks, and carried off the prey the eagles had conveyed to their young, substituting the entrails of animals and other offal. The prey was generally mutilated by the young eagles before it could be thus captured, but the bishop considered it to have a finer flavour than anything the markets could afford. He added, that when the young eagles had acquired sufficient strength to fly, the shepherds fastened them to the nest, that the parent birds might continue their supply of food. In this way three or four eagles' nests sufficed to supply a splendid table throughout the year; and so far from murmuring at the ravages of the eagles, he considered himself happy in being situated in a neighbourhood where he reckoned every eyrie as a kind of annual rent.

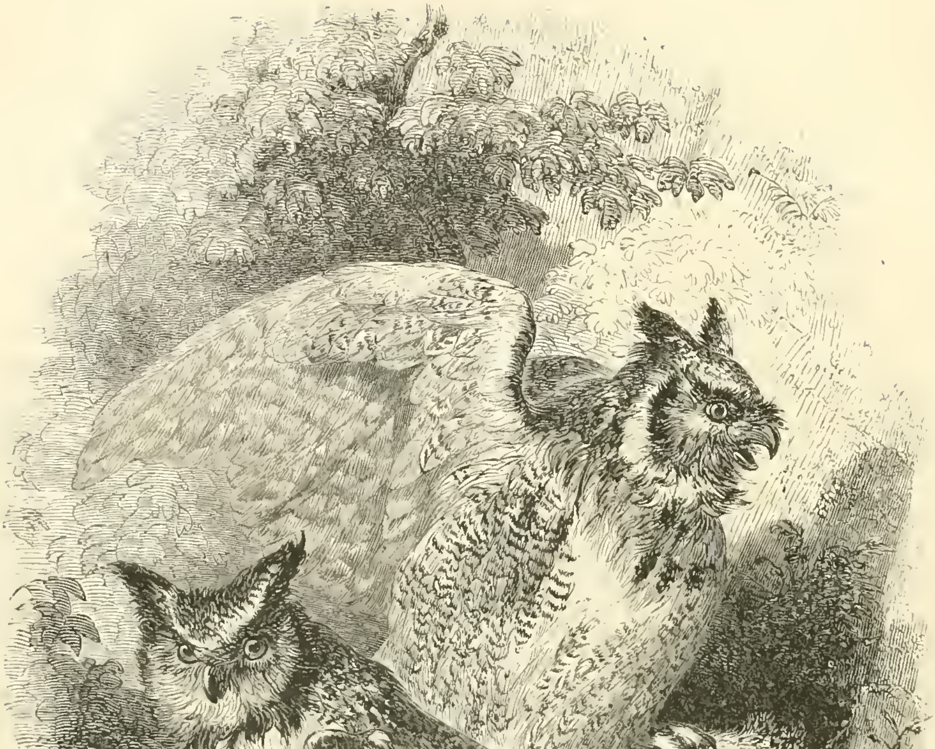
Smith relates, in his "History of Kerry," that a poor inhabitant of that county provided for his family abundantly during an entire year, by taking from an eagle's nest the food brought there by the parents, and that he might prolong their attentions beyond the ordinary period, he clipped the wings of the eaglets, and so retarded their departure.

Many years ago an eagle was taken in the forest of Fontainbleau, in a trap set for foxes, the spring of which broke his claw. He bore, however, a painful operation that was required with great patience. While it was proceeding, his head only was at liberty, and with this he did not oppose the dressing of the wound, from which several splinters were taken, nor did he afterwards attempt to disturb the bandages when they were arranged. He even passed the entire night without the least motion. The next day, when all the bandages were unwrapped, he lodged himself on a screen, where he remained twelve hours without once resting on the injured foot.

He made no attempt to escape, though the windows were open. He rejected all nourishment till the thirteenth day of his captivity, when he seized a rabbit, which had been given him, with his uninjured claw, and killed it with a stroke of his beak between the head and the first vertebra of the neck. After devouring it, he resumed his usual place upon the screen, from whence he stirred no more till the twenty-first day after the accident. He then began to try the wounded limb, and without in the least deranging the ligature by which it was bound, he gradually exercised it till it regained its full power. In the room of the servant who attended him he passed three months. As soon as the fire was lighted he came up to it, and suffered himself to be caressed; at bed-time he mounted his screen, as close as possible to the attendant's bed, but removed to the opposite end as soon as the lamp went out. He was a very beautiful creature, and did not appear to suffer from the least weakness in consequence of the accident which deprived him of his liberty.



THE GOLDEN EAGLE. (Aquila Chrysatos. Sav.)



EAGLE OWLS.

The beak is large, powerful, and deeply curved; the eyes are remarkably bright and piercing, and the toes are provided beneath with several large callous tubercles, so as to protect the talons, which are extremely acute and much elongated. Of these the inner and posterior are by far the largest, and the latter sometimes attains an extent of three or four inches, measured along its curve. In its attitudes the bird is generally considered particularly majestic, its powerful grasp enabling it to perch itself in a bold upright posture, with its wings closely pressed to its sides, its neck elevated to the plane of its back, and its breast thrown boldly forwards.

Ages ago, it was said by Homer: —

> —— "Endued with sharpest eye,
> The sacred eagle from his walks above
> Looks down and sees the distant thicket move,
> Then stoops, and seizing on the quivering hare,
> Snatches his life."

An anatomical examination has demonstrated the absolute perfection of this bird's visual power. The orb of its eye is supported by fifteen bony plates, which are capable of a slight motion on each other; the crystaline lens is precisely adapted to its circumstances; while, like other birds, the eagle has the power of altering the degree of the convexity of the cornea.

Each nest is occupied by a single couple and their mutual progeny. Except during the time of incubation, the male and female constantly pursue their game in company, so that they are almost always seen flying in pairs. From the clefts of the rocks or the summits of lofty trees, they sweep the country round in search of the living animals on which they prey. Their flight is at once swift and powerful. Mounting to an exceedingly high pitch, they descend upon their victim with overwhelming rapidity, and bear it off in their talons, if it be not too heavy, to their nest. In their attacks, they frequently select such animals as are capable of making some resistance; not, however, as has been absurdly stated, from any principle of magnanimity, but solely because their love of rapine impels them to grasp at the larger in preference to the smaller prey. Their food consists chiefly of foxes, lambs, fawns, and birds of various kinds. The destruction which a pair of eagles occasions among the game of the surrounding district for many a league, is almost incredible. Bechstein says, that in one eyrie, in Germany, were found the skeletons of three hundred ducks and forty hares; and it is probable that these were only the remains of such as the eagles could take to their nest; the relics of the larger game being left after the feast on the spot where the animals were slaughtered. It has been said that these birds sometimes carry off infants; and Anderson asserts that in Iceland they have been known even to seize upon children of four or five years old. We hesitate, however, to adopt such statements. There is reason to suspect in such instances great exaggeration, and often absolute invention.

While the plumage of the golden eagle is immature, and in this stage it continues to the end of the third year, the basal portion of the tail, for more than half its length, is of a pure white; whence the older writers on Ornithology supposed it to be a distinct species, and described it as such under the name of the ring-tailed eagle, a mistake corrected by subsequent and accurate observation. When the bird is full grown, the wings, when closed, very nearly reach the extremity of the tail, which may be observed to be strikingly rounded in its outline by the regular abbreviation of the feathers on either side.

As soon, however, as the young become capable of seeking their subsistence, they are driven from the nest and compelled to choose a distant spot for their retreat. So jealous, indeed, are the eagles of the undivided sovereignty of the districts they inhabit, that they will not suffer even their own progeny to hunt within the circle of their domains.

Golden eagles sometimes attain a very great age. Klein mentions one that had been confined at Vienna for upwards of a century, and died there in 1719. Supposing an error to have arisen in this instance, we have abundant evidence that these birds will live for a considerable time in a state of captivity. All that is requisite to their subsistence is sufficient food, and with their lot they appear perfectly content.

Indocile as the great eagle may seem, it was formerly employed in the East for the purposes of hunting. Some people of the north still train this bird for the chase. The Kirguis, whose country is situated eastward of the Caspian Sea, judge by certain marks of the disposition of these eagles; and purchase from the Russians of Samara, at a great price, eagles taken from the nest, to train them to hunt the wolf, the fox, and the gazelle.

The golden eagle builds on all the mountain chains of Europe, Asia Minor, Tartary, Siberia, and the North of Africa, and in the northern regions of America. It was once common in many of the hilly districts of England, and till lately it bred annually in Westmoreland, Cumberland, and the Peak of Derbyshire. In Scotland and Ireland it still frequents the mountains, and is occasionally seen in Wales. Wooded mountain scenery, with bold abrupt rocks and steep craggy precipices, are its favourite abode.

The nest of the golden eagle forms a solid platform, of several feet in width, built of sticks and branches of trees, interlaced with smaller twigs, and crowned with layers of reeds or heath. The female seldom lays more than two or three eggs, of a dirty white, spotted with red.

This bird, in its adult state, is almost wholly coloured of a dusky brown, with an admixture of lighter brown on the edges of the feathers, and particularly on the shoulders. The feathers appear to be for the most part white at the base, or accompanied by a fine white down, so that when they are ruffled the brown colour of the surface appears to be mixed or mottled with white. The entire tail is of a uniform brownish black, varied only by occasional transverse narrow wavy bars of gray. When full grown, the golden eagle measures about three feet in length, and upwards of seven in the expanse of its wings.

It has been said with truth of one class of the birds now under our consideration:—

> "The tawny eagle seats his callow brood
> High on the cliff, and feasts his young with blood;
> On Snowdon's rocks, or Orkney's wide domain,
> Whose beetling cliffs o'erhang the western main,
> The royal bird his lonely kingdom forms
> Amidst the gathering clouds and sullen storms;
> Through the wide waste of air he darts his sight,
> And holds his sounding pinions poised for flight;
> With cruel eye premeditates the war,
> And marks his destined victim from afar:
> Descending in a whirlwind to the ground,
> His pinions like the rush of waters sound;
> The fairest of the fold he bears away,
> And to his nest compels the struggling prey;
> He scorns the game by meaner hunters tore,
> And dips his talons in no vulgar gore." *

* Mrs. Barbauld.

The attention of the parent bird to her eaglets has often been noticed. Sir Humphrey Davy had an opportunity of witnessing the instructions given, and thus records the fact: "I once saw a very interesting sight above one of the crags of Ben Nevis, as I was going in the pursuit of black game. Two parent eagles were teaching their offspring, two young birds, the manœuvres of flight. They began by rising from the top of the mountain, in the eye of the sun. It was about mid-day, and bright for this climate. They at first made small circles, and the young birds imitated them. They paused on their wings, waiting till they had made their first flight, and then took a second and larger gyration, always rising towards the sun, and enlarging their circle of flight, so as to make a gradually ascending spiral. The young ones still slowly followed, apparently flying better as they mounted; and they continued this sublime exercise, always rising, till they became mere points in the air, and the young ones were lost, and afterwards their parents, to our aching sight."

"Though certainly," says a naturalist, "the eagles in some localities commit great havoc among the lambs, and also destroy the grouse when no larger game offers itself, it would be a great pity that this noble bird should become extinct in our Highland districts, who, notwithstanding his carnivorous propensities, should be rather preserved than exterminated. How picturesque he looks, and how perfectly he represents the *genius loci*, as perched on some rocky point or withered tree, he sits unconcerned in wind and storm, motionless and statue-like, with his keen, stern eye, however, intently following every movement of the shepherd or of the sportsman, who, deceived by his apparent disregard, attempts to creep within rifle-shot. Long before he can reckon on reaching so far with his bullet, the bird launches himself into the air, and gradually sweeping upwards, wheels high out of shot, leaving his enemy disappointed and vexed at having crept in vain through bog and over rock, in expectation of carrying home so glorious a trophy of his skill. When intent on his game, the eagle frequently will venture within a short distance of the grouse-shooter or deer-stalker. I have seen him pounce (no, that is not the proper word, for he rather rushes,) down on a pack of grouse, and, with outspread wings, he so puzzles and confuses the birds, that he seizes and carries off two or three before they know what has happened, and in the very face of the astonished sportsman and his dogs. The mountain hare, too, is carried off by the eagle with as much apparent ease as the mouse is borne away by the kestrel."

The Sea Eagles of M. Savigny form a less noble as well as a less typical group than the true eagles, from which they recede considerably both in organization and habits. They have all a greater or less tendency to change, in a remarkable degree, the colour of their plumage on the head and neck as they advance in age, evincing in this, as in several other respects, an approximation to certain South American groups, in which those parts are feathered in the young state and denuded in maturity, and through them to the vultures, in which the head and neck are, in all stages of their growth, covered with a silky down.

In the choice of their food, the Sea Eagles are far less scrupulous than their brethren on the land. Inhabiting most commonly the sea-coast, or the banks of the larger rivers and inlets, they prey chiefly on fishes and aquatic birds. These they usually carry off to devour at their leisure either on the rocks or in their nests. But occasionally, when all other resources fail, they fix themselves on the dead carcases of animals which are thrown upon the shore, and their manner of feeding under such circumstances closely resembles the disgusting voracity of the vultures. For hours, and sometimes for days together, they remain stationary upon the putrid carrion, and quit it only when it no longer affords the means of satiating the cravings of their appetite.

The Great Sea Eagle is an inhabitant of nearly the whole of Europe and of northern Asia. It sometimes builds its nests in the clefts of rocks, but more frequently on the summit of some lofty tree. The female lays two eggs, about the same size and shape as those of a goose. The young are fed with fish or flesh until they are able to quit the nest, when they sally forth with their parents in quest of their own prey, and speedily assume an independent mode of life.

THE WHITE-HEADED SEA EAGLE.*

There is little to distinguish this bird, in the earlier stages of its growth, from the great sea eagle. It afterwards acquires a character, which at once renders confusion impossible. This consists in the pure whiteness of its head and neck, from whence it has derived the popular, but inappropriate title, of the bald eagle, by which it is most commonly known.

The young are covered at first with a thick whitish or cream-coloured cottony down; they gradually become of a gray colour as their plumage is developed, and continue of a brown gray until the third year, when the white begins to make its appearance upon the head, neck, tail-coverts, and tail. These are completely white, or at the most very slightly tinged with cream-colour, by the end of the fourth year. The eye is at first hazel, but gradually brightens into a brilliant straw-colour as the plumage of the head becomes white.

About the third year the upper parts of the head and body exhibit a mixture of brown and dirty white, the separate feathers having a ground of the latter colour, and being deeply tipped and broadly barred along the centre, with the former. The quill-feathers and primary wing-coverts are black, with their shafts of a pale brown; the secondary are considerably lighter; and the tail, which projects in a trifling degree beyond the extremities of the wings, is brown on the outer quills, and of a mixed white and brown on the inner. The under surface, as far backward as the middle of the belly, is of a much lighter shade than the upper, being of a dull white with numerous broad streaks of pale brown. In the posterior part it is of a deep brown, the feathers being only slightly margined with white. A similar hue prevails on the upper parts of the legs, which are plumed somewhat below the knees. The beak is of a dusky brown; the cere and legs of a golden yellow; the iris somewhat lighter; and the talons deep blackish brown. The latter are long, sharply curved, of considerable power, and extremely sharp at the points. The bird, when fully grown, measures upwards of three feet from beak to tail, and more than seven in the expanse of its wings. Its beak is changed to a bright yellow, and, according as the bird is more or less advanced in age, its head, a greater or less proportion of the neck, and the entire tail, become perfectly white.

The White-headed Eagle is usually described as inhabiting the northern parts both of the old and the new continent; but it appears to be only a rare and occasional visitant of the former. It is probable that some of the varieties of the common sea eagle have been frequently mistaken for it. Throughout nearly the whole of North America, on the contrary, where the European specimen seems to be unknown, it is met with in great abundance, as well on the sea-coast as on the banks of the broad lakes and rapid rivers, from which the chief part of its sustenance is derived.

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* Haliaëtus Leucocephalus.

This bird selects a very tall tree, usually a pine or a cypress, and keeps to the same nest, season after season, for a long period. The best account of this structure, however, is found in the far-famed American ornithology.

"In the month of May," says Wilson, "while on a shooting excursion along the sea-coast not far from Great Egg Harbour, accompanied by my friend Mr. Ord, we were conducted about a mile into the woods to see an eagle's nest. On approaching within a short distance of the place, the bird was perceived slowly retreating from the nest, which we found occupied the centre of the top of a very large yellow pine. The woods were cut down, and cleared off for several rods around the spot, which circumstance gave the stately, erect trunk, and large, crooked, wriggling branches of the tree, surmounted by a black mass of sticks and brush, a very singular and picturesque effect. Our conductor had brought an axe with him to cut down the tree; but my companion, anxious to save the eggs, or young, insisted on ascending to the nest, which he fearlessly performed, while we stationed ourselves below, ready to defend him in case of an attack from the old eagles. No opposition, however, was offered; and on reaching the nest, it was found, to our disappointment, empty. It was built of large sticks, some of them several feet in length; within it lay sods of earth, sedge, grass, dry reeds, &c., piled to the height of five or six feet, by more than four in breadth; it was well lined with fresh pine tops, and had little or no concavity. Under this lining lay the recent exuviæ of the young of the present year, such as scales of the quill, feathers, down, &c. Our guide had passed this place late in February, at which time both male and female were making a great noise about the nest; and, from what we afterwards learnt, it is highly probable it contained young even at that early time of the season."

"The following year," says Mr. Ord, "on the first day of March, a friend of ours took from the same nest three eggs, the largest of which measured three inches and a quarter in length, two and a quarter in diameter, upwards of seven in circumference, and weighed four ounces, five drachms, apothecaries' weight; the colour, a dirty yellowish white, one was of a very pale bluish white; the young were perfectly formed. Such was the solicitude of the female to preserve her eggs, that she did not abandon the nest until several blows with an axe had been given the tree."

"A few miles from this," continues Wilson, "is another eagle's nest, built also on a pine tree, which, from the information received from the proprietor of the woods, had been long the residence of this family of eagles. The tree on which the nest was originally built had been from time immemorial, or at least ever since he remembered, inhabited by these eagles. Some of his sons cut down this tree to procure the young, which were two in number; and the eagle soon after commenced building another nest on the very next adjoining tree, thus exhibiting a very particular attachment to the spot. The eagles, he says, make it a kind of home and lodging place in all seasons. This man asserts, that the gray, or sea eagles, are the young of the bald eagles, and that they are several years old before they begin to breed. It does not drive its young from the nest like the osprey or fish-hawk; but continues to feed them long after they leave it."

It would appear that this eagle is partial to the vicinity of cataracts, great numbers of them frequenting the falls of Niagara; and in Lewis and Clark's expedition, we meet with the following account of one of their nests, which must have added not a little to the picturesque effect of the magnificent scenery at the falls of the Missouri. "Just below the pitch," say these travellers, "is a little island in the middle of the river well covered with timber. Here, on a cotton wood tree, an eagle had fixed its nest, and seemed the undisputed mistress of the spot, to contest whose dominion neither man nor beast would venture across the gulfs which surround it, and which is further secured by the mist rising from the falls."

Its favourite places of resort are chosen not merely as fishing stations, where it is able to satiate its hunger on its most congenial food, but also in consequence of the vast numbers of four-footed beasts, which, unwarily venturing into the stream—as at Niagara—are borne away by the torrent and precipitated down those tremendous falls. The number of birds of prey of various kinds which assemble at the foot of the rocks to glut themselves on the banquet thus provided, is said to be incredibly great; but they are all compelled to give place to the eagle, when he deigns to feed on carrion, and the crow and the vulture submit, without a struggle, to the exercise of that tyranny which they know it would be in vain to resist.

"We have ourselves," says Wilson, "seen the bald eagle, whilst seated on the dead carcase of a horse, keep a whole flock of vultures at a respectful distance, until he had fully sated his appetite." And he adds another instance, in which many thousands of tree squirrels having been drowned, in one of their migrations, in attempting to pass the Ohio, and having furnished for some time a rich banquet to the vultures, the sudden appearance among them of a white-headed eagle at once put a stop to their festivities, and drove them to a distance from their prey, of which the eagle kept the possession for many successive days.

So strong a propensity for carrion is, doubtless, quite at variance with the received opinion that eagles only make their attacks on living animals; but it should be remembered, that the sea eagles have an organization peculiarly fitted for feeding on fish, and are consequently better adapted for digesting putrescent, and even putrid food, than any other group of the tribe to which they belong. They carry their voracity indeed to a disgusting extent.

The most common method of obtaining food, adopted by the white-headed eagle, consists in snatching from the fish-hawk, a variety of the osprey, the hard-earned morsel for which the latter has watched in vain. "Elevated," says Wilson, "on the high dead limb of some gigantic tree that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below; the snow-white gulls slowly winnowing the air; the busy tringæ coursing along the sands; trains of ducks streaming over the surface; silent and watchful cranes, intent and wading; clamorous crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these hovers one, whose action instantly arrests his attention. By his wide curvature of wing, and sudden suspension in the air, he knows him to be the fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight, and balancing himself with half-opened wings on the branch, he watches the result.

"Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around! At this moment, the eager looks of the eagle are all ardour; and, levelling his neck for flight, he sees the fish-hawk once more emerge struggling with his prey, and mounting in the air with screams of exultation. These are the signals for our hero, who, launching into the air, instantly gives chase, and soon gains on the fish-hawk, each exerts his utmost to mount above the other, displaying in these rencontres the most elegant and sublime aerial evolutions. The unincumbered eagle rapidly advances, and is just on the point of reaching his opponent, when with a sudden scream, probably of despair, and honest execration, the latter drops his fish; the eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp, ere it reaches the water, and bears his ill-gotten booty silently away to the woods."

Sometimes, however, the fish-hawks assemble in bands too numerous for him to encounter, and he is driven to hunt for himself. He then usually retires inland, and occasionally destroys great numbers of young pigs and lambs. At other times he contents himself with fowl; and ducks, geese, and gulls fall victims to his insatiable appetite.

A vivid picture of the eagle, in such circumstances, has been painted by the pencil of Audubon:—

"To give you," he says, "some idea of the nature of this bird, permit me to place you on the Mississippi, on which you may float gently along, while approaching winter brings millions of water-fowl, on whistling wings, from the countries of the north, to seek a milder climate in which to sojourn for a season. The eagle is seen perched in an erect attitude on the highest summit of the tallest tree, by the margin of the broad stream. His glistening, but stern eye, looks over the vast expanse; he listens attentively to every sound that comes to his quick ear from afar, glancing now and then on the earth beneath, lest even the light tread of the fawn may pass unheard.

"His mate is perched on the opposite side, and should all be tranquil and silent, warns him by a cry to continue patient. At this well-known call, the male partly opens his broad wings, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac. The next moment he resumes his erect attitude, and again all around is silent. Ducks of many species, the teal, the wigeon, the mallard, and others, are seen passing with great rapidity, and following the course of the current; but the eagle heeds them not, they are at that moment beneath his attention. The next moment, however, the wild, trumpet-like sound of a yet distant, but approaching, swan is heard. A shriek from the female eagle comes across the stream; for, kind reader, she is fully as alert as her mate. The latter suddenly shakes the whole of his body, and, with a few touches of his bill, aided by the action of his cuticular muscles, arranges his plumage in an instant.

"The snow-white bird is now in sight; her long neck is stretched forward; her eye is on the watch, vigilant as that of her enemy; her large wings seem with difficulty to support the weight of her body, although they flap incessantly. So irksome do her exertions seem, that her very legs are spread beneath her tail to aid her flight. She approaches, however. The eagle has marked her for his prey. As the swan is passing the dreaded pair, the male bird starts from his perch, in full preparation for the chase, with an awful scream that to the swan's ear brings more terror than the report of the large duck-gun. Now is the moment to witness the eagle's powers. He glides through the air like a falling star, and like a flash of lightning, comes upon the timorous quarry, which now, in agony and despair, seeks by various manœuvres, to elude the grasp of his cruel talons; it mounts, doubles, and willingly would plunge into the stream, were it not prevented by the eagle, which, long possessed of the knowledge that by such a stratagem the swan might escape him, forces it to remain in the air, by attempting to strike it with his talons from beneath.

THE CAPTURED SWAN.

"The hope of escape is soon given up by the swan. It has already become much weakened, and its strength fails at the sight of the courage and swiftness of its antagonist. Its last gasp is about to escape when the ferocious eagle strikes with his talons the under side of its wing, and, with unresisted power, forces the bird to fall in a slanting direction upon the nearest shore. It is then, reader, that you may see the cruel spirit of this dreaded enemy of the feathered race, whilst, exulting over his prey, he, for the first time, breathes at ease.

"He presses down his powerful feet, and drives his sharp claws deeper than ever into the heart of the dying swan. He shrieks with delight as he feels the last convulsions of his prey, which has now sunk under his unceasing efforts to render death as painfully felt as it can possibly be. The female has watched every movement of her mate, and if she did not assist him in capturing the swan, it was not from want of will, but merely because she felt full assurance that the power and courage of her lord were quite sufficient for the deed. She now sails to the spot, where he eagerly awaits her, and when she has arrived, they together turn the breast of the luckless swan upwards, and gorge themselves with gore."

"At other times, when these eagles, sailing in search of prey, discover a goose, a duck, or a swan, that has alighted on the water, they accomplish its destruction in a manner that is worthy of our attention. Well aware that water-fowl have it in their power to dive at their approach, and thereby elude their attempts upon them, they ascend in the air, in opposite directions, over the lake or river on which the object they are desirous of possessing has been observed. Both reach a certain height, immediately after which, one of them glides with great swiftness towards the prey; the latter, meantime, aware of the eagle's intention, dives the moment before he reaches the spot. The pursuer then rises in the air, and is met by its mate, which glides towards the water-bird that has just emerged to breathe, and forces it to plunge again beneath the surface, to escape the talons of this second assailant. The first eagle is now poising itself in the place where its mate formerly was, and rushes anew to force the quarry to make another plunge. By thus alternately gliding, in rapid and oft-repeated rushes, over the ill-fated bird, they soon fatigue it, when it stretches out its neck, swims deeply, and makes for the shore, in the hope of concealing itself among the rank weeds. But this is of no avail; for the eagles follow it in all its motions, and the moment it approaches the margin, one of them darts upon it."

The flight of the white-headed eagle, when taken into consideration with the ardour and energy of his character, is noble and interesting. Sometimes the human eye can just discern him, like a minute speck, moving in slow curvatures along the face of the earth. At others, he glides along in a direct horizontal line, at a vast height, with expanded and unmoving wings, till he gradually disappears in the distant blue ether.

THE WASHINGTON EAGLE.*

The Washington Eagle seems to nestle in the holes as well as the shelves of rocks. M. Audubon has given a very animated and interesting narrative of his discovery of this magnificent eagle, with a portion of which we shall enrich our pages.

"It was on a winter's evening," says he, "in the month of February, 1814, that, for the first time in my life, I had an opportunity of seeing this rare and noble bird, and never shall I forget the delight it gave me. Not even Herschel, when he discovered the famous planet which bears his name, could have experienced more happy feelings; for to have something new to relate, to become yourself a contributor to science, must excite the proudest emotions of the human heart. We were on a trading voyage, ascending the Upper Mississippi, the keen winter blasts whistled over our heads, and the cold, from which I suffered, had, in a great degree, extinguished the deep interest which, at other seasons, this river has been wont to awake in me. I lay stretched beside our patroon, the safety of the cargo was forgotten, and the only thing that called forth my attention was the multitude of ducks, of different species, accompanied by vast flocks of swans, which, from time to time, would pass on. My patroon, a Canadian, had been engaged many years in the fur-trade; he was a man of much intelligence, who, perceiving that these birds had engaged my curiosity, seemed only anxious to find some new object to divert me. The eagle flew over us. 'How fortunate!' he exclaimed; 'this is what I could have wished. Look, sir! the great eagle; and the only one I have seen since I left the lakes.' I was instantly on my feet, and having observed it attentively, concluded, as I lost it in the distance, that it was a species quite new to me. My patroon assured me that such birds were indeed rare: that they sometimes followed the hunters, to feed on the carcases of the animals they had killed, when the lakes were closed by the ice; but when open, they would dive in the daytime after fish, and snatch them up in the manner of the fish-hawk; that they roosted, generally, on the shelves of the rocks, where they built their nests, of which he had discovered several by the quantity of white exuviæ scattered below. His account will be found to accord with the observations which I had afterwards an opportunity of making myself. Being convinced that the bird was unknown to naturalists, I felt particularly anxious to learn its habits, and in what particulars it differed from the rest of its genus. In the United States, from Massachusetts to Louisiana on the sea-board, or as high as the mouth of the Missouri to the north-west (I speak only of the extent of country I have visited, and where I have seen them), these birds are very rare. This will appear to all, when I say, that during my many long peregrinations, I never found more than eight or nine, and only one nest. My next meeting with this bird was a few years afterwards, whilst engaged in collecting cray-fish, in one of those flats which border and divide Green River, in Kentucky, near its junction with the Ohio, from the range of high cliffs which, for some distance, follow the meanders of that stream. I observed on the rocks, which at that place are nearly perpendicular, a quantity of white ordure; thinking that owls resorted thither, I mentioned it to my companions, when one of them, who lived within a mile and a half of the place, told me that it was from the nest of the brown eagle, meaning the young of the white-headed eagle, with which he was acquainted. I assured him this could not be, and remarked, that this species never built in such places, but always in trees. Although he could not answer my objection, he stoutly maintained that a brown eagle of some kind, above the usual size, had built there; he added, that he had espied the nest some days before, and had seen one of the old birds dive and catch a fish. This he thought strange, having, till then, always observed that brown and bald eagles procured this kind of food by robbing the fish-hawks; but if I felt particularly anxious to know what nest it was, I might soon satisfy myself, as the old birds would come and feed their young with fish; he had seen them do so before. In high expectation, I seated myself about a hundred yards from the foot of the rock. Never did time pass more slowly; I could not help betraying the most impatient curiosity, for my hopes whispered it was the great eagle's nest. Two long hours had elapsed before the old bird made his appearance, which was announced to us by the loud hissings of the two young ones, who crawled to the extremity of the hole, to receive a fine fish. I had a perfect view of this noble bird, as he held himself to the edging rock, his tail spread, and his wings partly so, and hanging something like the bank swallow. I trembled, lest a word should escape from my companions —the slightest murmur had been treason from them; they entered into my feelings, and, although little interested, gazed with me. In a few minutes the other parent joined her mate, which, from the difference in size (the female being much larger), we knew to be the mother-bird. She, also, had brought a fish; but, more cautious than her mate, ere she alighted she glanced her quick and piercing eye around, and instantly perceived her procreant bed had been discovered; she dropped her prey, with a loud shriek communicated the alarm to the male, and hovering with him over our heads, kept up a growling threatening cry, to intimidate us from our suspected design. This watchful solicitude I have ever found peculiar to the female. The young having hid themselves, we went and picked up the fish which the mother had let fall; it was a white perch, weighing about five pounds and a half; the upper part of the head was broken in, and the back torn by the talons of the eagle. We had plainly seen her bearing it in the manner of the fish-hawk. This day's sport being at an end, as we journeyed homewards we agreed to return the next morning, being most anxious to procure both the old and young birds; but rainy and tempestuous weather setting in, our expedition was obliged to be postponed till the third day following, when, with guns and men all in readiness, we reached the rock. Some posted themselves at the foot, others upon it, but in vain. We passed the entire day without either seeing or hearing the eagle; the sagacious birds, no doubt, having anticipated an invasion, had removed their young to fresh quarters. I come at last to the day I had so often and so ardently desired. Two years had gone by since the discovery of the nest, in fruitless excursions; but my wishes were no longer to remain ungratified. In returning from the little village of Henderson to the house of Dr. R———, about a mile distant, I saw one rise from a small inclosure not a hundred yards before me, where the doctor had, a few days before, slaughtered some hogs, and alight upon a low tree branching over the road. I prepared my double-barrelled piece, which I constantly carry, and went slowly and cautiously towards him; quite fearless he awaited my approach, looking upon me with an undaunted eye. I fired, and he fell; before I reached him, he was dead. With what delight I surveyed this magnificent bird! I ran and presented him to my friend, with a pride which those can only feel, who, like me, have devoted their earliest childhood to such pursuits, and have derived from them their first pleasures; to others, I must seem 'to prattle out of fashion.' The doctor, who was an experienced hunter, examined the bird with much satisfaction, and frankly acknowledged he had never before seen or heard of it. The name I chose for this new species of eagle, was 'The bird of Washington,' from its being indisputably the noblest of the genus known to naturalists." *

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* Falco Washingtoniensis. Aud.

THE WEDGE-TAILED EAGLE.†

The Wedge-tailed Eagle may be regarded as the type of a distinct form in the family to which it belongs. It agrees with the genuine eagles of the Old World in most points of its general structure, and more particularly in its lengthened wings and feathered legs, but differing from them in the character from which it derives its name. The middle feathers of the tail exceed the outermost by about four inches, and hence it has a wedge-shaped termination. This form is peculiar to the continent of New Holland, where this bird appears exclusively to occupy the place of the even-tailed species of the European and Asiatic group, none of which have been hitherto detected on any part of the Australian coast.

The earliest account of this eagle was given in "Collins's English Colony in New South Wales in 1802," but the wedge-shaped termination of the tail appears to have been overlooked. The individual engraved in that work was captured by Captain Waterhouse in an

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* Loudon's Mag. of Nat. Hist. i. p. 118.

† Aquila Fucosa. Cuv.

excursion to Broken Bay. It gave proof of its strength by forcing its talons through a man's foot while lying in the bottom of a boat with its legs tied together. During the ten days it remained in captivity it refused to be fed by any but one particular person. The natives, regarding it with wonder and fear, could never be prevailed to approach it. They asserted that it would carry off a middling-sized kangaroo. But it did not wait to yield much opportunity for observation. One morning it was found to have divided the strands of the rope by which it was fastened, and thus to have made its escape.

A mate was found for the solitary wedge-tailed eagle of the Zoological Gardens; but the eggs laid by the female bird have not been reared. The first, Mr. Broderip states, was placed under a hen, "good, easy Dame Partlet, but it was removed, after twenty-one days, in an addled state. The process of incubation was continued by the same means for twenty-two days, when the egg became addled. A third egg was destroyed by the parents. A few days after another egg was laid, but no effort was made to get it hatched. The imprisoned parents made a poor apology for a nest of birch-broom and straw—the materials within their reach; but so far from manifesting an intention to perform the parental office, they tried to destroy every one of the eggs.

THE CARACARA EAGLE.*

Among the birds of prey this is one of the most handsome. It is the type of a genus (*Polyborus*) established by M. Vieillot, and regarded by him, and most systematic writers, as one of the connecting links between the eagle and the vulture tribes. In the partial nakedness of its head, the prominence of its crop, and the position of its eyes on a level, or nearly so, with the general surface, it bears some resemblance to the vultures. But it bears a much clearer relation to the eagles, in almost every other part of its general structure, as well as in its habits and modes of life.

From the structure of the birds of this genus, though very destructive in their habits, they are incapable of a lofty flight, of taking their prey on wing, or of carrying it to a distant nest. They are more frequently seen walking, and walk much better than almost any other birds of prey, and have, therefore, a much more varied bill of fare than falls to the lot of the nobler species of their tribe. Hence the generic name which M. Vieillot has chosen is from two Greek words, meaning much food. The essential characters of this genus consist of a beak, somewhat elongated, compressed laterally, strongly hooked at the tip of the upper mandible, narrow elliptical nostrils, wings nearly equal to the tail in length, of a rounded form, with the third and fourth quill-feathers longest, rather long naked legs, and claw of moderate length and curvature, but with little acuteness or power of grasping.

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* Polyborus Vulgaris. Vieill.

In the Brazilian Caracara the whole upper surface of the head is black, with the feathers slightly elongated backwards, and capable of being partially elevated in the shape of a pointed crest. The entire neck is of a light brownish gray, which also forms the ground colour on the breast and shoulders, but with the addition on these parts of numerous wavy bars of a deeper brown. Nearly all the rest of the plumage is of a tolerably uniform shade of blackish brown, with the exception of the tail, which is at the base of a dirty white, with numerous narrow bands of a dusky hue. The beak is horn-coloured at the tip and bluish at the base, the iris hazel, the legs yellow, and the claws black. Such, at least, were the colours of the specimen that appeared in the gardens of the Zoological Society. As the bird advances in age, however, several changes take place in its plumage, as is well illustrated by an extensive series of specimens in its Museum. So great, in fact, is the variation of colour in this species that scarcely any two descriptions correspond throughout, and the figures by which it is illustrated differ very considerably.

According to D'Azara, the full-grown bird measures twenty-one inches and a half in length, and fifty in the expanse of its wings. The first six quill-feathers of the wings are white, marked with rays and spots of brown, and become blackish toward the point. The back is transversely rayed with brown and white, the latter predominating on its upper half, and *vice versâ*. The fore-part of the neck and breast are traversed by dusky lines mixed with a large proportion of white. The cere is of an orange hue ; and the throat and sides of the head are almost white. This description very nearly accords with one by Baron Cuvier, and with another by M. Vieillot.

The range of this fine bird extends over a considerable part of South America. In Brazil it is said to be most abundant in the south and east. D'Azara speaks of it as less numerous on the Rio de la Plata than in Paraguay, where it is almost equal in number to all the other birds of prey. It builds its nest on the tops of trees, and in preference on those which are most infested with climbing shrubs. Where such are not to be found it selects a bushy thicket, in which it forms a spacious eyrie of sticks and twining branches laid nearly flat, and lined with a thick layer of hair inartificially disposed. The female lays in August, September, or October, two eggs, much pointed at one extremity, and dotted and spotted with crimson on a ground of brownish red.

According to D'Azara, this bird is by no means nice as to its food. It feeds on all the animals that are devoured by vultures, buzzards, hawks, falcons, and insectivorous birds ; it watches, seizes, and devours a great variety of living creatures, while carrion forms part of its subsistence. It has been shot in the act of extracting insects from the bodies of oxen, which were gladly submitting to the process, and even turns up the ground in quest of worms.

The Caracara lives alone or in pairs, but sometimes four or five of these birds unite to pursue a prey that a single one would be unable to master. D'Azara states that he has seen them hunt down, in this manner, red buzzards, herons, and other large birds ; and it is generally believed that they contrive by the same means to destroy the American ostrich, young fawns, and lambs. Not content with the prey which they themselves have procured, they often feast upon that which has been taken by others. Thus, if a Caracara sees a vulture devour a piece of flesh, it will pursue him and compel him to disgorge it. The sportsman, too, is not unfrequently foiled by the intervention of this bird, which will carry off his game before his eyes. It makes its advances with as little shyness as the vultures, to the very precincts of inhabited places, where, perched on the trees, on the house-tops, or stalking along upon the ground, it takes no pains to conceal itself. No one, in fact, troubles it, for its flesh is quite unfit to eat, and it rarely renders itself obnoxious by attacking the domestic poultry.

We give two other examples of birds included in the genus *polyborus*, one the *falco aquilinus* of Gmelin, called by Buffon *le petit aigle à gorge nue d'Amérique*, the plumage of which is a black blue. It lives in troops in the forests of Guiana and Brazil. The Creoles name it *capitaine des gros-becs*, because it has some resemblance to the toucans.

Only two birds are known of the kind above mentioned: one in the Island of Madagascar, the other at the Cape of Good Hope. With the habits of these birds we have yet to become acquainted.

VULTURINE CARACARA EAGLE.*

We sometimes meet with forms which appear as links between others, of which the bird thus represented is an example; indicating the continuity of affinity between the Eagle and Vulture families. The approach is much more nearly to the latter than the Brazilian caracara. Two that were in the possession of the Zoological Society, were actually sold to them under the name of "Pharaoh's chickens," the common designation of the Egyptian vulture. And yet there is no inconsiderable dissimilarity. Indeed, however, they differ in many essential particulars, the very distinct character of their beak is alone fully sufficient to remove any impression of similarity which might otherwise be produced by their coincidence in general appearance. In the latter respect, as well as in several of their technical characters, they are truly vulturine; while in many points of structure, in their air, and in their habits, they seem to approach more nearly to the eagles.

The beak of these birds is deep, elongated, and nearly similar in form to that of the caracara, but much more compressed and flattened at the sides; its upper surface is arched for the greater part of its length, the extreme point terminating considerably below the extremity of the lower mandible, which is embraced within it, and the opening being long, straight, and without dentation. The nostrils are placed transversely, and are long-oval in their form, and in these respects they differ from those of the caracara. The naked space of the cheeks is less extensive, and less defined at its edges, but entirely surrounds the eyes, which are placed in both birds almost on a level with the general surface of the head. In the birds now under consideration, the head is narrower and less flattened above, and the neck more elongated; both which circumstances, as well as the somewhat downy character of the feathers by which these parts are covered, tend to increase their resemblance to the vulture tribes. The wings are long, reaching to, or even beyond, the extremity of the tail, and are rounded in their outline. The tail is even and slightly rounded; the rather long and slender legs are naked and reticulated from the joint downwards; the toes are rather short; and the talons weak and but little curved—the inner and the posterior being alone capable of grasping with any degree of firmness.

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* Vultur Angolensis. Lath.

Our information as to these birds is, at present, very limited. Judging from analogy, they should be natives of South America, but even this point has not, as yet, been determined. Two of them were, some years ago, in the possession of the Zoological Society. In manners these birds resemble the genuine eagles; they had the same upright attitude, subsisted entirely on flesh, and refused fish if offered them.

THE OSPREY.

The Osprey, or Ossifrage, is so named because fragments of bones of considerable magnitude have been found in its stomach. It inhabits the different countries of Europe and North America; though it generally prefers cold and even frozen regions, such as Russia, Siberia, and Kamschatka. From its usual habitat on the sea-shore, on the banks of great rivers and lakes, over which it is continually hovering, it has been called the Fish-hawk.

The plumage of the Osprey, like that of all other birds, is precisely adapted to its circumstances. It is beautifully compact. The wings are very long, and extend considerably beyond the tip of the tail; the general colour of the upper parts is rich, glossy brown; and the tail is barred with alternate bands of a light and darker colour. The upper parts of the head and neck are white, or yellowish white, a band of brown

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* Pandion Haliaëtus. Sav.

passing from the beak down the side of the neck. The under parts are white, with dashes of yellowish tint before the fully mature plumage is assumed. The length of the bird is about two feet ; the expanse of its wings about four feet six or eight inches.

Audubon states that the ospreys show themselves along the shores of the United States, and the lakes and rivers in spring, as they are proceeding northwards, and also in autumn, when they retire to warmer climates. "At these seasons they appear in flocks of eight or ten, follow the windings of our shores in loose bodies, advancing in easy sailings or flappings, crossing each other in their gyrations. During the period of their stay in the United States, many pairs are seen nestling, rearing their young, and seeking their food within so short a distance of each other, that, while following the margins of our eastern shores, a fish-hawk, or nest belonging to the species, may be met with at every short interval.

The sole food of the osprey is fish ; unlike the rest of its tribe, though possessing formidable power, it attacks neither birds nor quadrupeds, and even permits other birds (as the fish-crow and purple grakle) to entrench upon the outside of its nest, making it a domicile of their own. This, to be sure, is no inconvenience, as the osprey's nest is of immense size ; it is built in a large tree near the water, or at the edge of a wood, at no distance from it, and is composed of such a mass of sticks, sea-weed, grass, and other materials, as to measure often four feet across.

There is a strong attachment between the male and female birds. The former assists in incubation, assiduously supplying his mate with food, though each in its turn goes in quest of some for itself. At such times the male bird is now and then observed rising to a great height in the air over the spot where his mate is seated, ascending, by continued flappings, almost in a direct line, meeting the breeze with his white breast, and sometimes uttering a cackling kind of note. On attaining his utmost elevation, where, indeed, no human eye can perceive him, he utters a loud shriek, dives smoothly on half-extended pinions, and then, expanding his wings and tail, he glides towards the female bird in her nest, in a beautifully curved line. Partially raising herself from her eggs, she utters a low cry, resumes her former posture, and her delighted partner flies off to the sea, to regale her with a favourite fish.

"Occasionally," says Wilson, "an osprey comes sailing down the course of the river, but does not breed anywhere in our immediate neighbourhood. This very beautiful bird drops like a stone on any unlucky fish that its sharp eye may detect in the clear pools of the river, and I believe she seldom pounces in vain. Having caught a trout or small salmon, she flies with it to land, or to some rock, and there tears it up. When the river is too high and black for the fish to be attainable, no dead carcase comes amiss to her ; and in floods in the Findhorn there is seldom any dearth of food of this kind. Mountain sheep or wounded roe are frequently swept down its rapid course, when swollen with much rain, or by the melting of snows on the higher mountains from whence this river derives its source. This winter, a young red deer (a calf of about eight months old), was found in the river. The animal had been shot with a slug through the shoulder, and had probably taken to the water (as wounded deer are in the habit of doing), and had been drowned and carried down the stream."

"The regular arrival of this noted bird at the vernal equinox, when the busy season of fishing commences, adds peculiar interest to its first appearance, and procures it many a benediction from the fishermen." Wilson, therefore, appends to his statements the following lines, illustrative of these circumstances.

“ Soon as the sun, great ruler of the year,
Bends to our northern climes his bright career,
And from the caves of ocean calls from sleep
The finny shoals and myriads of the deep;
When freezing tempests back to Greenland ride,
And day and night the equal hours divide;
True to the season, o'er our sea-beat shore,
The sailing osprey high is seen to soar,
With broad unmoving wing; and circling slow,
Marks each loose straggler in the deep below;
Sweeps down like lightning! plunges with a roar!
And bears his struggling victim to the shore.
The long-housed fisherman beholds with joy
The well-known signals of his rough employ,
And, as he bears his net and oars along,
Thus hails the welcome season with a song:—

THE FISHERMAN'S HYMN.

The osprey sails above the sound,
The geese are gone, the gulls are flying;
The herring shoals swarm thick around,
The nets are launched, the boats are plying;
Yo ho, my hearts! let's seek the deep,
Raise high the song, and cheerily wish her,
Still as the bending net we sweep,
‘God bless the fish-hawk and the fisher!’
She brings us fish,—she brings us spring,
Good times, fair weather, warmth, and plenty,
Fine stores of chad, trout, herring, ling,
Sheepshead, and drum, and old wives' dainty.
Yo ho, my hearts! &c.
She rears her young on yonder tree,
She leaves her faithful mate to mind 'em;
Like us, for fish, she sails to sea,
And plunging shows us where to find 'em.
Yo ho, my hearts! &c.”

THE SECRETARY BIRD.*

The Secretary bird is a native of Southern Africa, and appears to be tolerably numerous in the neighbourhood of the Cape. Its colour is light gray; the quill-feathers and secondaries are black, as are also the thighs and the crest-feathers; the two long middle tail-feathers are gray, becoming black towards their extremities, and ending in a white tip, as do the rest of the tail-feathers, which are otherwise black.

When standing erect, the height of this elegant bird is upwards of three feet; its gait is a singular stalk, resembling, in some degree, that of a person elevated on stilts. Its bill is sharp and crooked; the eyes are large and prominent, but the sight is protected from the glare of intense light by a row of strong, black eyelashes, like bristles. Its peculiar name may well excite curiosity as to its origin. It arises from a tuft of several elongated feathers springing from behind the head, and from a fancied resemblance which these have to pens stuck behind the ear. These feathers are raised up at the will of the bird, so as to form a beautiful crest. The two middle tail-feathers are double the length of the others.

Like the eagles, these birds live in pairs, and not in flocks; they build their eyrie, if so it may be termed, on the loftiest trees, or, where these are wanting, in the most bushy and tufted thickets. Natives of the deserts and mountain gorges of Africa, they take up their abode among sandy plains, interspersed with tracts of stunted, shrubby vegetation, or skirted by forests of gigantic growth, preying on the reptiles which infest a thinly-peopled region, beneath the rays of a burning sun. Their length of limb is precisely adapted to enable them to pass with facility over loose and yielding sand, and through tangled brushwood, but operates, in conjunction with their wings, as weapons of defence.

In the neighbourhood of the Cape, these birds have been tamed to such a degree as to render them useful inmates of the poultry-yard, in which they not only destroy the snakes and rats, which are too apt to intrude on these precincts, but "even," it is said, "contribute to the maintenance of peace among its proper inhabitants, by interposing in their quarrels, and separating the furious combatants, which disturb it by their brawls."

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* Gypogeranus serpentarius. Ill.

THE HARPY EAGLE.*

The most formidable and ferocious of the family of birds, of which we have been treating is, probably, the Harpy eagle. It appears to be peculiar to South America. The beak, the talons, and the tarsi of this bird are all indicative of extraordinary robustness and power. A peculiarity is also observable in the wings, which from their rounded form, are adapted rather to skim along the ground, than to mount into the higher regions of the air.

From the back of the head arises a crest, composed of numerous broad feathers, of a dull black, capable of being erected or depressed at will. The middle feathers of this crest are by far the shortest, so that when the whole is erected it forms two plumes, not unlike those which are observable in the great-eared owl. The rest of the head is covered with thick, soft, downy plumage, of a light slate colour. The back, the wings, and a broad band across the chest are grayish black; the under surface is white; the tail barred; the beak black; the tarsi yellow.

There is, however, considerable difference in the colours of the immature bird. M. Temminck describes the young, in its passage to the adult plumage, as having the back and wings grayish fawn-colour, irregularly marbled and spotted with black; the bars that cross the legs fewer and more irregular; all the lower parts of a whitish fawn-colour, mixed with darker spots; the upper surface of the tail ash-coloured, and marked with small blackish spots, the places of the future bands being marked by patches of black, which increase in size at each successive change of plumage; and its under surface whitish, dotted with fawn.

According to Hernandez, the Harpy does not scruple to attack the most ferocious beasts, and even man himself; but when he adds that it is so docile, that it may be tamed and trained to hawk as readily as the rest of the accipitrine tribe, we feel persuaded that these statements must alike be greatly exaggerated. An additional reason for this conclusion appears in his assertion, that the Harpy eagle is quarrelsome, sullen, and fierce, and preys not merely on birds, but on hares, and other similar animals. Linnæus affirms, probably on the report of the keepers of the Spanish menagerie, that it is able to split a man's skull with a single blow of his beak.

Mauduyt states, on the authority of travellers, that it commonly feeds on two species of sloth, which are found in the forests of Guiana, and carries off in its talons fawns and other young quadrupeds. Sonnini, who confirms these details, describes it as living perfectly solitary in the depth and darkness of the thickest forests, where, of course, it is seldom disturbed by the curiosity of man. He himself observed it perched on the banks of the Orapu, where it seemed almost motionless, and uttered no cry. He fired at it, but his shot having only broken the wing of the bird, he fastened it by one leg to the boat, in which position it remained during several days, displaying no disposition to mischief, but constantly refusing all kinds of food.

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* Harpyia Destructor. Cuv.

Our acquaintance with the Harpy eagle, in a state of nature, is unavoidably incomplete. In captivity, there is little to distinguish it from other birds of the same tribe. One individual, taken from the nest, became so tame as to suffer its head to be handled and scratched; but, unhappily, it was found dead in its passage to Europe. It is supposed to have fallen a victim to the vengeance of the sailors. Their monkeys, in their gambols, unconsciously approached too near the cage of this powerful bird, which seized them with its mighty talons, and having skinned them, devoured them with almost all their bones.

One of these birds lived long in the Menagerie of the Tower of London, and another in the Gardens of the Zoological Society.

As we can give only some of the most remarkable specimens of the different families of birds, it will be well, before we proceed, to glance at some striking facts in reference to the eagles, on various examples of which we have now been dwelling. It may, however, be premised that, in common with other birds, they enjoy the advantage of a remarkable defence from too strong sight, which consists of the *membrana nictitans*, the nictitating membrane. In the human eye, there is a little red fleshy membrane, in the form of a crescent, which may be observed in a looking-glass, by turning the eye away as far as possible from the nose. The membrane, in such a position of the eye, is spread over its inner angle, and when any dust has fallen on the ball, it sticks to this, and is carried into the corner of the eye, by the membrane folding back. But in birds, this membrane is much more extended, and is spread over the whole eye by means of two muscles, one forming a tendonous cylindrical canal, the other passing through this, and working like a cord in a pulley. The membrane being translucent when it is drawn over the eye like a curtain, is well calculated to protect the organ from being dazzled by an excess of light.

The Abbé Spallanzani made several experiments on the digestive powers of the eagle, which, he says, was the common eagle of Buffon, and the black eagle of Linnæus, both synonymous with the golden eagle.*

"The ordinary food of my eagle," says the Abbé, "consisted of live cats and dogs when I could procure them. It easily killed dogs much larger than itself. When I forced one of these animals into the apartment where I kept the eagle, it immediately ruffled the feathers on the head and neck, cast a dreadful look at the dog, and taking a short flight, immediately alighted on his back. It held the neck firm with one foot, by which the dog was prevented from turning his head to bite; and with the other grasped one of the flanks, at the same time driving the talons into the body; and in this attitude it continued till the dog expired, in the midst of fruitless cries and efforts. The beak had been hitherto unemployed, but it was now used for making a small hole in the skin, which was gradually enlarged; from this the bird began to tear away and devour the flesh, and went on till it was satisfied. I must not omit observing that it never eat any skin, nor intestine, nor bone, except very small ones, such as the ribs of cats and small dogs. Notwithstanding this ferocity, and violent impetuosity in attacking animals, it never gave any molestation to man. I, who was the feeder, could safely enter the apartment where the bird was kept, without any means of confining its movements, and beheld these assaults without dread or apprehension; nor was the eagle at all hindered from attacking the living prey I offered it, or rendered shy by my presence. As it was not always in my power, or at least in my will, to give it living food (for I had not always dogs and cats at hand; and fowls, which are equally acceptable, were too expensive), I substituted flesh, which, though it was not so well relished, was not disagreeable. In general, when it had flesh at will, it only made one meal a day. I found, by weighing what it ate, that thirty ounces of flesh served it one day with another. This species of eagle is provided with a very large craw, which, of course, is the first receptacle of food, and when it was at liberty to eat its fill, this was generally distended to a larger size than that of a turkey-cock full of grain; it gradually contracts in proportion as the flesh passes into the stomach, just as it happens in common fowls."

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* Ornithology, by Ray, p. 58.

It may seem strange that eagles should discover a want of courage, yet M. Vaillant mentions an instance of this kind. "I was once," he says, "witness to a combat which took place in the environs of Paris, between ten missel-thrushes and a white-tailed eagle,* in which the latter was completely beaten, and had squatted down in a shed, where he had sought refuge. Attracted by the reiterated cries and continued agitation of the thrushes, whose manœuvring announced something extraordinary, I went to the spot, and was surprised to discover them engaged with an eagle. Being in what were called the royal preserves, I was not provided with arms, but unwilling to resist so fine an opportunity of procuring a bird which would be a valuable acquisition to my collection, I ran to my house at Asnières, a village not far from the spot, and returned with a pistol, loaded with a large ball, as my fowling-piece would have too much exposed me. I regained the plain; I saw the eagle still fighting with the missel-thrushes, who had not in the least given way; and, in defiance of watchful and inflexible keepers, and the atrocious game-laws, with a heart palpitating between joy and apprehension, I approached within ten paces of the dastardly bird, and nicely adjusting my pistol, killed him in a moment. Immediately burying my weapon, and concealing the eagle among some brambles, I quitted the place, looking eagerly around me with no little apprehension, as every man whom I saw moving about the plain seemed to me to wear a keeper's uniform; but this time the vigilance of the keepers was at fault—there was no cause for alarm. I bore off my prize, and gained my dwelling without detection, where, proud of my acquisition, I invited all my friends to be witnesses of my triumph."

M. Huber, in a work published in 1784, entitled "Observations sur le Vol des Oiseaux de Proie," has made many remarks on the flight of rapacious birds. Of these he makes two divisions: the *rowers*, birds of high flight, and the *sailors*, birds whose flight is low. The wing of the rowers is slender, attenuated, only slightly convex, and when unfolded subject to very considerable tension. The first ten quills are entire, and their barbs touch each other without separation, in their entire length. The motions of this wing are rapid, easy, and strong. Accordingly the ravens fly against the wind, with the head straight, and raise themselves without difficulty into the high regions of the air, where they sport in all directions. On the contrary, the wing of the sailor is thicker, more massive and arched, and less stretched in the act of flying. The first five quills, of an unequal length, are sloped from the middle to the extremity. Thus that portion of the wing which is most important for the purposes of flight, presents an interrupted surface to the air, and the wing itself, actuated by forces of less energy, fails of producing so perfect an effect. We find, therefore, that these birds can only fly with advantage when the wind is in the rear. They keep their heads low, and seldom rise except for the purpose of discovering their prey. The word *sailor* very appropriately depicts this mode of flying; the wings being extended and motionless, and the body carried along by the force of the wind. In fact, it is, strictly speaking, a sort of sailing. The quills of the rowing wing are generally more firm than those of the sailing. This is indicated by the lively and marked variegation which predominates in the former from one end to the other; while, in the latter, a tone of deep uniform black prevails from the sloping of the feather to the point, and a white equally uniform from the origin of the quill to the commencement of the sloping.

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* Aquila chrysaëtos.

There is, likewise, a different structure in the talons of the rowers and sailors. The toes in the former are longer, finer, and more supple. They embrace a more extended surface, and being moved by a longer lever, are capable of a more powerful retention than those of the sailing birds, which are thicker and shorter. As, too, they are more curved and acerated, they penetrate more easily, and inflict a more dangerous wound.

The rowing birds seize at once their intended victims, when these are more light of body than rapid in their movements. When the prey is of greater weight and is more active, they strike it to diminish its strength and speed. With instinctive precision they invariably attack the vital part, which in birds is on the hollow of the occiput, and between the shoulders and the ribs in the mammalia. It is also remarkable that the smaller species are the most quickly destructive. The merlins, for instance, scarcely touch the vital part before death ensues.

The sailors are not so precise when they strike, their chief resource being to seize the victim and compress it to death. When they cast themselves on a hare, they seize it by the neck with one of their talons and strangle it. Their beak, not being indented, tears the skin and flesh, but seldom breaks the bones, except when they are so situated that its point can manage them in its curvature. In the thickest woods these birds exhibit extraordinary address in seizing their prey.

* Haliætus Albicilla. Sav.

THE FALCONS.

THE FALCON.

Linnæus has comprehended, under the denomination *falco*, not only the eagles, but the falcons and many other rapacious birds, which later naturalists have found the necessity of separating from that division. And yet the species of which the genus falco remains composed, undergo, in the course of years, so many variations in their plumage, that they are scarcely even now to be distinguished with exactitude. But the generic characters have become certainly much more definite and precise. They consist of a beak curved from the base, the upper mandible of which, crooked at its extremity, is armed on each side and towards the end with, one and sometimes more, teeth, more or less projecting; the lower one of which, being convex underneath, is sloped to the point. From the centre of their circular nostrils arises a pliant and conical tubercle. The tongue is fleshy, sloped, and canaliculated. The tarsi are short. The feet are provided with strong toes, of which the external have a membrane at the base. The three external pen-feathers of the wings are narrowed and pointed at the end. The second is the largest, and the others, from the fourth to the tenth, are regularly wedged.

The falcons proper are distinguished from the gyr-falcons by a tooth more strongly defined on each side of the upper mandible, which amongst the others is a mere festoon; the lower mandible is also much more sloped at its point than the true falcons.

In the species of both sections we discover certain general characters. The head and neck are clothed with feathers, the brows form a projection which makes the eye appear sunk, and the female is one-third larger than the male. But the falcons, more courageous in proportion to their size, and therefore termed "noble birds of prey," have peculiar habits resulting from the length of the wings, which, in a calm air, render their flight very oblique, and forces them, when they want to rise directly, to fly against the wind. They are also more docile, and better for the purposes of falconry, being more easily taught to pursue the game and to come when called.

The Common Falcon is about the size of a hen. It is common in France, and is also found in Poland, Germany, Switzerland, Spain, Italy, and in several islands of the Mediterranean, among which are Malta, Cyprus, and Rhodes. It always prefers mountainous and rocky countries, and is, perhaps, the most courageous of all birds in proportion to its size. Instead of approaching its prey sideways, like the hawk, and some other birds of the same order, it drops perpendicularly upon it, devours it on the spot if it be large, and if it be not too heavy, the falcon carries off its victim, rising with it perpendicularly in the air. It frequently attacks the kite, either to deprive that bird of its prey or to task its own courage. Such are the habits which have always been considered peculiar to the falcon.

It is in the cliffs of the most rugged rocks exposed to the south, and in high mountains, that the falcon most frequently establishes its eyrie. There the female lays three or four eggs of a reddish yellow, with brown spots. Cuvier tells us that in France the little ones are hatched towards the middle of the month of May. As soon as they are able to obtain nutriment for themselves, the parents not only drive them from the nest, but force them to quit that particular district, reserving it entirely for themselves.

A correspondent of M. Vieillot supplied that naturalist with some observations, made in the plains of Champayne, where the falcons arrive in the month of August. He states that he has seen these birds hunting singly, or in couples, and darting with extreme rapidity from a hillock of earth, or the low branch of a tree, the instant they perceived a flock of partridges. On such occasions, the falcon followed the flock, crossed it, and in passing, endeavoured to seize a partridge in its claws, or to give it so violent a shock with its breast as to stun, or even kill the bird. It returned sometimes after this shock, with so much agility, as to catch and carry off the partridge before it had fallen; and if it did not reach it until the prey came to the ground, it generally ate it on the spot, or took it behind an adjacent bush. According to this gentleman, the falcon does not follow the partridges on foot, but endeavours to cause their rising by shaving the earth, and making a noise like the whistling of a bullet. The falcon, though passing and repassing many times, does not always succeed in his attempts, the partridges squatting down, or concealing themselves in the bushes. It also gives chase to other birds, as pheasants, larks, thrushes, pigeons, and even ducks, which dive into the water the moment they see their enemy.

The falcon is very long-lived. One of these birds, belonging to James I., in 1610, with a gold collar bearing that date, was found in 1793, at the Cape of Good Hope. This bird, though more than a hundred and eighty years old, still possessed considerable vigour.

The command which these birds have of the air is truly wonderful. A few strokes of their powerful wings will send them up till they are hardly visible, or bring them from the top of their flight to within a short distance of the ground. At times they will ride motionless, and anon, with hardly any perceptible motion of their wings, they will shoot with the rapidity of a meteor, and with greater certainty than an arrow from the bow of a skilful archer. The collision of their pounce is terribly effective. Surprising is the force that can break a wing, strike off a head, or burst a bird asunder, when it is not merely suspended in the air, but in rapid motions away from the striker.

Belm traces the origin of the name of this bird to the word *gyps*, a vulture, and *falco*. The word *gyr falco* seems immediately formed from *geyer*, the German for a vulture, and *falco*. It is also called, however, the Iceland falcon.*

The gyr-falcon is one of the boldest and most powerful of the class. This fine species seems now confined almost entirely to the most northern parts of Europe and America. It is well known in Iceland and Greenland, and was often seen by Dr. Richardson during his journeys over the barren grounds of North America, where it preys habitually on ptarmigan, not, however, despising plovers, ducks, and geese. "In the middle of June," he observes, "a pair of these birds attacked me as I was climbing in the vicinity of their nest, which was built on a lofty precipice on the borders of Point Lake, in latitude 65½°. They flew in circles, uttering loud and harsh screams, and alternately stooping with such velocity that their motion through the air produced a loud rushing noise; they struck their claws within an inch or two of my head. I endeavoured, by keeping the barrel of my gun close to my cheek, and suddenly elevating its muzzle when they were in the act of striking, to ascertain whether they had the power of instantaneously changing the direction of their rapid course, and found that they invariably rose above the obstacle with the quickness of thought, showing equal acuteness of vision and power of motion. Although their flight was much more rapid, they bore considerable resemblance to the snowy owl." The doctor adds, that when the gyr-falcon pounces down upon a flock of ptarmigan, the latter endeavour to save themselves by diving instantly into the loose snow, and making their way beneath it to a considerable distance.

The gyr-falcon is one of the most esteemed of rapacious birds for the purposes of falconry. When at liberty, it preys on nothing but birds, and it will attack some of large size, as the heron and the stork. It kills hares by dropping perpendicularly upon them, and is so ardent in pursuit of its prey, that after having torn one in pieces, it often abandons it to give chase to another. In the north of Russia, they take the gyr-falcons with nets, above which they suspend waving feathers to packthreads extended from one tree to another, at the same time fastening pigeons to the ground to serve as a bait.

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* Falco Islandicus. Lath.

THE PEREGRINE FALCON.*

The peregrine falcon, the best known and most remarkable of its tribe, derives its name from its periodical migrations, the Latin word *peregrinus* meaning a wanderer. It is only, however, of late years that it has been well understood, several other species having been formerly confounded with it; while mere variations of sex, age, and climate, were regarded as distinct species. To M. Bechstein, and to Mr. Wilson, of Edinburgh, we are greatly indebted for our acquaintance with the history of this bird, and the changes it undergoes.

It is not surprising that different ages of this bird should have been regarded as distinct species by those who had no opportunity of watching the progress of its growth. At every successive change the plumage undergoes a fresh modification, not in colour alone, but even in the distribution of the markings. It is only at the third or fourth moulting that it assumes anything like permanence of character; and even after that time, it gradually becomes lighter as the bird advances in age. In the first year it is generally of a light brown on the upper parts, with an ash-colored tinge on the middle of the feathers. Its head and neck are whitish, with a tinge of red and numerous dark brown spots; its throat and under parts dirty white, with longitudinal spots of brown; its iris brown; its cere—the membrane which covers the base of the bill—is of a bluish horn-colour, and its legs are yellow. As it advances in age, the upper parts become grayish brown, with lighter transverse bands; and the longitudinal markings of the under surface are converted into transverse bars. This conversion takes place in a gradual manner, and affords a certain means of distinguishing the young from the adult bird, not only in the present species, but throughout the hawk and falcon tribes.

At the same time there is developed in the peregrine falcon a character, which is not very distinct in the young bird, and is somewhat more faintly marked in the female than in the male. It consists of a broad black streak passing downwards obliquely over the cheeks from the inner angle of each eye, and giving to the bird a very peculiar expression of countenance. When perfectly full-grown, the beak is lead-coloured, with a darker tip; the cere has a greenish tinge; and the irides are yellow. The upper parts of the head and neck are of a bluish black; the back has a lighter tinge of lead-colour, crossed by scarcely perceptible blackish bars; and the black whiskers are strongly developed. The quill-feathers of the wings and tail are of a dusky black; the latter crossed by numerous ash-coloured bars, and yellowish white at the tip. All the under parts are white; a series of transverse brownish bars commence on the lower part of the breast and extend to the tail; the upper part of the breast is marked by a few longitudinal streaks; but the throat is entirely free.

Such are the more usual modifications of colour in the peregrine falcon, of which Mr.

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* Falco Peregrinus.

Wilson enumerates no less than ten varieties, dependent chiefly on age, sex, and country. It is found, more or less abundantly, throughout the whole of Europe, principally in the mountain districts, in North, and probably South America, and in New Holland, dwelling in the clefts of rocks, especially such as are exposed to the noon-day sun. It breeds upon the cliffs in several parts of England, but appears to be more common in Scotland. "We are occasionally visited," says a naturalist, "by the peregrine falcon, who makes sad havoc in the poultry-yard when he appears here. There is a nest of these birds always built in the inaccessible rocks of the Findhorn, a village and seaport of Scotland. Indeed, in the good old days of hawking, when a gentleman was known by his hawk and hound, and even a lady seldom went abroad without a hawk on her gloved hand, the Findhorn hawks were always in great request." Mr. Selby, when describing the birds observed in the vicinity of St. Abb's Head, says, "that the eyrie of the peregrine falcon had long been established there. A pair of old ones and a pair of young ones were seen at this visit. It was from this locality that the late Mr. Baird, of Newbyth, usually obtained his cast of hawks, for each of which he gave the persons who undertook the perilous task of scaling the precipice, one guinea." The castings of these birds Mr. Selby noticed were scattered in great profusion upon the tops of the cliffs ; those examined were almost wholly composed of the bones and feathers of gulls and other aquatic fowl ; others were mixed with the feathers of partridges, and the bones of rabbits and young hares. It is stated by Sir John Sebright, that numbers of them have taken up their abode on Westminster Abbey, and on other churches in London, and made great havoc among the tame pigeons.

The food of the peregrine falcon consists principally of small birds, especially of the gallinaceous order ; but they scruple not to attack the larger species, and sometimes give battle even to the kite. "The peregrine," says the naturalist just quoted, "seems often to strike down birds for his amusement ; and I have seen one knock down and kill two rooks, who were unlucky enough to cross his flight, without taking the trouble to look at them after they fell. In the plain country near the sea-shore, the peregrine frequently pursues the peewits and other birds that frequent the coast. The golden plover, too, is a favourite prey, and affords the hawk a severe chase before he is caught. I have seen a pursuit of this kind last for nearly ten minutes, the plover turning and doubling like a hare before greyhounds, at one moment darting like an arrow into the air, high above the falcon's head ; at the next, sweeping round some bush or headland—but in vain. The hawk, with steady, relentless flight, without seeming to hurry herself, never gives up the chase, till the poor plover, seemingly quite exhausted, slackens her pace, and is caught by the hawk's talons in mid-air, and carried off to a convenient hillock or stone to be quietly devoured."

Audubon says—"The flight of this bird is of astonishing rapidity. It is scarcely ever seen sailing, unless after being disappointed in its attempt to secure the prey which it has been pursuing ; and even at such times it rises with a broad, spiral circuit, to attain a sufficient elevation to enable it to reconnoitre a certain space below. . . . The search is often performed with a flight resembling that of a tame pigeon, until, perceiving an object, it redoubles its flappings, and pursues the fugitive with a rapidity scarcely to be conceived. It follows and nears the timorous quarry at every turn and back-cutting which the latter attempts. Arriving within a few feet of the prey, the falcon is seen protruding his powerful legs and talons to their full stretch. His wings are for a moment almost closed ; the next instant he grapples the prize, which, if too weighty to be carried off directly, he forces obliquely toward the ground, sometimes a hundred yards from where it was seized, to kill it or devour it on the spot." Ducks, which have been struck down by it, have been observed to have their backs lacerated the whole length by the blow of its talons. The appearance of this hawk strikes universal panic among the hordes of water-fowl; all are eager to escape their dreaded foe; "all speed to the water, and there remain till the hawk has passed them, diving the moment he comes near them. It is worthy of remark, that he will seldom, if ever, strike over the water, unless it be frozen, well knowing that it will be difficult to secure his quarry." Audubon states that he has seen this bird "come at the report of a gun, and carry off a teal, not thirty steps distant from the sportsman who has killed it, with a daring assurance as surprising as unexpected;" and that this conduct is a notorious characteristic of the species.

The naturalist, already twice referred to, gives us the following fact. "Two years ago I brought a young peregrine falcon down from near the source of the Findhorn, where I found her in the possession of a shepherd's boy, who fed her wholly on trout. For the first year the bird was of a dark brown colour above, with longitudinal spots on the feathers of her breast. On changing her plumage, during the second autumn of her existence, she became of a most beautiful dark slate colour above, and the spots on her breast turned into cross-bars, every feather being barred with black; her throat became of a beautiful cream colour. With great strength, she is possessed of the most determined courage, and will attack any person or dog whom she takes a dislike to. Her poultry-killing propensities oblige me to keep her chained in the kitchen-garden, where no other bird, except a tame owl, resides. The owl she appears to tolerate with great good-nature, and even allows him to carry off any remains of pigeon or crow that she leaves after she has satisfied her hunger. One day an unfortunate duck strayed within reach of her chain, and was immediately pounced on and devoured, leaving a numerous family of ducklings to mourn her loss."

In different stages of its growth, the peregrine falcon has been known by various English names. The falconers call it the slight falcon, the term falcon gentle being equally applicable to all the species when rendered manageable. The young bird of the year is called an Eyess, from the French *niais*, most of the terms in falconry having been adopted from the French. In the immature state this falcon is also called a red hawk, from the prevailing colour of its plumage. When full-grown and in a wild state, it is called a haggard or passage falcon. The male is called a tiercel or tersel, to distinguish it from the female, which, among birds of prey, is most commonly one-third larger than the male.

There seems to have been a passion for hawking among all the nations that owned a Scandinavian origin, and perhaps none exceeded our forefathers in its intensity. A king of Kent begged from a prince abroad two falcons of "such skill and courage as to attack cranes willingly, and seizing them, throw them on the ground." Birds of no little vigour would thus be required; and the king, it appears, made the request "because there were few hawks of that kind in Kent." They would, therefore, be of no inconsiderable value. There are instances, too, of Saxons leaving hawks to their friends by will; and one of the kings of the Heptarchy bestowed special favours on those who "carried with them hawks or falcons."

In the court of the king of Wales there were only three officers of his household above the master of the hawks. This person occupied the fourth place from the sovereign at the royal table, but he was prohibited from drinking more than three times, lest he should become intoxicated, and, in consequence, neglect his birds. Not only had he the management of the hawks, and of the people employed in this sport, but when he had been very successful in it, the king was accustomed to rise up and receive him on his entrance; and even, on some occasions, to hold his stirrup. Ethelston made North Wales provide him not only with so many dogs as he chose, "whose scent-pursuing noses might explore the haunts and coverts of the deer," but "birds who knew how to hunt others along the sky."

In France there was an officer called the "Grand Falconer," who was a person of so much importance that his salary was four thousand florins, and he was attended by fifty gentlemen and fifty assistant falconers. He was allowed to keep three hundred hawks; he licensed every vender of hawks in the kingdom; and received a fee on every one of these birds that were sold. The king never rode out on any occasion of consequence without being attended by this officer.

In England kings, knights, ladies, and all the most important of its personages were long extremely fond of the pastime of hawking. Indeed there was no out-door amusement in which "the fair" joined to so great an extent as in this. According to Froissart, Edward III. had with him, when he invaded France, thirty falconers on horseback, who had charge of his hawks, and every day he either hunted or hawked, as he was disposed. The same monarch received a falcon as a present from the king of Scotland, and so highly did he value the gift, that he awarded the falconer who brought it with a donation of forty shillings.

The following complaint was made by a writer of the fifteenth century:—

"Into the church then comes another sotte,
  Withouten devotion, setting up and down,
Or to be seene, and showe his garded cote;
  Another on his fiste a sparhawke or fawcone,
  Or else a cokow; wasting so his shone."

In Henry VII.'s reign it was enacted, that if any one should take the eggs out of a hawk or falcon's nest, he should suffer imprisonment for one year and a day, and be liable to a fine at the king's pleasure; one-half of which belonged to the crown, and the other half to the owner of the ground wherever the eggs were found; and if a man destroyed the eggs on his own ground, he was equally subject to the penalty. Henry VIII. pursuing his hawk on foot, at Hitchin, in Hertfordshire, attempted, with the assistance of his pole, to jump over a ditch that was half-full of muddy water. The pole broke, and the king fell with his head into the mud, where he would have been stifled, had not a footman, who was at hand, leaped into the ditch and released the king from his perilous situation. At the commencement of the seventeenth century a goshawk and a tassel-hawk were sold for one hundred marks, a large sum in those days, but which was not considered too large for birds, whose rearing required such extraordinary care, time, and trouble, as that of a hawk. How complete the training was, is evident from the language of Izaak Walton:—"In the air, my noble, generous falcon ascends to such a height as the dull eyes of beasts and fish are not able to reach to—their bodies are too gross for such high elevation—but from which height I can make her descend by a word from my mouth, which she both knows and obeys; to accept of meat from my hand; to own me for her master; to go home with me; and be willing the next day to afford me like recreation."

It was the practice of falconers to train the rapacious birds for seven different sorts of sport: for the kite, the heron, the crow, the pie, the hare, for open fields and for rivers.

The modes adopted for the taking and training of falcons are not a little remarkable, and a sketch of them, now falling into disuse, cannot fail to be interesting. When it is possible to capture the young ones, while as yet they are merely covered with down, their education is comparatively easy. They have little bells attached to their feet, and are placed on what is termed an eyrie. This, for a bird of high flight, is a cask staved at one end, rested on the side, lined with straw, and placed either on a low wall, or a hillock of earth, within reach of the master, with the opening turned towards the east. For a bird of low flight, the falconers use a kind of hut of twisted straw, set upon a tree of no great height, and within reach of the hand. Certain planks are placed near the openings of the hut or the cask, on which the birds perform their first exercises, and receive their food.

The food consists of beef and mutton, from which the fat and membraneous parts have been withdrawn, and which is cut into slender and oblong pieces. This aliment is given daily at seven in the morning and five in the evening, and the bird is excited to partake of it by an uniform cry, which he soon learns to recognise. On these planks, which serve as a table, they always place the food of the high-flying birds, but for the others it is set on the ground, as soon as they are strong enough to descend and re-ascend. The strength of both kinds is gradually exercised. They first reach the places which are near them by jumps, and then by a heavy sort of flying.

At six weeks old they can catch bats, swallows, and other creatures of little strength; as these come near them they are sure to become their victims. They lose their liberty at this period, being taken in snares or nets, and covered with a thick cloth, that they may be chained down in darkness. Jesses are now attached to the tarsi; manacles, in fact, of supple leather, to which is fastened a ring and a cord, so that the birds may be fixed on a log of wood on a level with the ground, surrounded with straw. Their heads are also covered with a hood, which hinders them from seeing, while it allows them to eat. The training is then commenced.

The birds which are taken after they have left the nest are more difficult to train than these, though less so than adults, with which, however, falconers must content themselves when they can get no others. These are taken in different ways.

The hawk, the martin, and the hobby, are taken in projecting nets, laid as if for larks. They immediately descend on the "calling birds," which are placed in the centre. Falcons and goshawks are sometimes taken in the same manner; but as this happens only when the birds are very hungry, and in the immediate neighbourhood, the fowler, desirous of taking them, provides himself with a tame shrike attached by a buckle.

This bird, which recognises from a great distance the various *accipitres* hovering on high, and is but slightly agitated when he perceives a buzzard, rushes into the hunter's lodge when he descries a falcon. The hunter then slips a pigeon under his net, also held by a long cord, to leave him the power of fluttering and exciting the falcon, which, when he attacks his prey bitterly, suffers himself to be drawn after it within the fall of the net. Should this plan not succeed, the fowler takes a tame falcon, which age and infirmity have rendered useless, and attaches it to the end of a long and pliant twig, by the feet, and fixes the other end of the twig in the ground. A cord, beginning from the point where the bird is retained, passes through the pulley which occupies the centre of the nets. The hunter, who holds the extremity of it in his box, on a signal given by the shrike, draws it, and the twig bending, obliges the falcon to extend its wings as if about to pounce on a prey. The wild bird then directly precipitates himself on the other, and falls into the snare.

As soon as the bird of prey is taken, his legs are passed into very strong manacles, the ring of which is crossed by a cord which serves as an attachment, and little bells are hung to his feet. The person charged with training him fortifies his hand with a glove, and taking the bird on his fist, fatigues him as long as possible in an obscure place, without allowing him to take food; so that, his strength being exhausted, he may be the better prepared for submission. When the bird agitates himself very much, and attempts to use his beak, cold water is thrown over the head, and even this is plunged into that fluid.

When, by these means, the trainers conquer his spirit, which is usually done in three days and nights, they cover his head with a hood, which is taken off and put on, according as he accustoms himself to take food uncovered, as it is presented to him from time to time. To weaken the bird more speedily, they make him swallow little pellets of hemp, which have an aperient influence.

Having succeeded in making him take his food easily, they carry him into a garden, where he is uncovered, and showing him some prepared meat, which is held a little elevated, they accustom him to leap upon the hand. When he does this with facility, they place the meat on a representation of a bird, formed by an assemblage of wings and legs, and called a *lure*, and to which they attract him successively from a greater distance, holding always by the cord. When he has been so trained as to pounce on the lure from the whole length of his tether, they accustom him to know and examine the game which he is destined to hunt. This is done by attaching the game to the lure, and allowing it to fly or run near the bird; first attached by a packthread, and then at liberty until they think they can trust him free from all restraint.

Where it is possible to choose birds for training, the falconers prefer those whose shape is the most easy and elegant, glance the proudest and most assured, toes the most elongated, grasp the most ample, and whose plumage is the deepest, and least charged with spots. The education is not the same with the sailors and the rowers; indeed, it varies according to the species. But, generally, the larger the species, the older the bird, and the more northerly its habitat, the greater is the difficulty of training.

About thirty years ago, Sir John Sebright made the following statement:—"The village of Falconswaerd, near Bois le Duc, in Holland, has for many years furnished falconers to the rest of Europe. I have known many falconers in England, and in the service of different persons on the continent, but I never met with one of them who was not a native of Falconswaerd. It has been the practice of these sober and industrious men to stay with their employers during the season for hawking, and to pass the remainder of the year with their families at home. John Pells, now in the service of my friend John Dawson Downes, Esq., of Old Gunton-hill, Suffolk, and who also manages the heron hawks, kept by subscription in Norfolk, is, I believe, the only efficient falconer by profession now remaining; all the others, whom I remember, are either dead or worn out, and there has been no inducement to younger men to follow the employment of their forefathers."

Some years ago a day's hawking took place in the fen-country of Norfolk, near a heronry. Towards this the wind blew when the party assembled in the afternoon. There were four couple of peregrine falcons carried by a man to the ground, upon an oblong kind of frame, padded with leather, on which the birds perched, and to which they were fastened by a thong of leather. Each bird had a small bell on one leg, and a leather hood, with an oblong piece of scarlet cloth stitched into it over each eye; and on the top of the hood a small plume of various-coloured feathers was placed. The man walked in the centre of the frame, with a strap from each side, over each shoulder; and when he arrived at the spot fixed upon for the sport, he set down the frame on its legs, took off all the falcons, and tethered them to the ground in a convenient shady place.

The birds were under the particular care of four foreigners, it is believed from Falconswaerd, each having a bag, somewhat like a woman's pocket, tied to his waist, containing a live pigeon as a *lure*, to which was fastened a long string. After waiting a while, some herons passed, but at too great a distance; at length one appeared to be coming within reach, and preparations were made for an attack on this bird. Each falconer wore a brown leather glove on his right hand to prevent the falcon's talons from scratching the wrist; and there was a small bit of leather attached to the leg of the bird, held by the falconer between the thumb and the finger.

Two of the men being now ready, each with a falcon on his fist, and the bag with the lure tied to the waist, and mounted on horseback, proceeded slowly in the direction from whence the heron was flying; and as soon as that bird was nearly opposite, though at a considerable height in the air, they slipped the hoods from off the heads of the falcons, holding them to the fist by the bit of leather, till they caught sight of the heron, when the sport commenced in earnest.

The moment they were let loose, off they went, straight as arrows, towards the heron, which by this time had gone a considerable distance a-head. Dashing away towards it, an unfortunate crow happened to cross their course, when one of the falcons instantly darted at him, but he contrived to escape by striking into a plantation, where the falcon followed, but did not take him. Another falcon soon overtook the heron, which began to prepare for the threatened attack, by disgorging two or three fishes; while the falcon, after flying round for a short time in circles, at length soared above him, and then pouncing downwards, struck him on the back, when they both came tumbling down together, from a great height to the ground.

The falcon which had lost some time in chasing the crow, was now flying with all speed to assist her companion, and was coming up just as the first falcon and heron were falling. At this instant a rook happened to fly across, when the disappointed falcon struck at him, and they both fell together within twenty yards of the other falcon and heron. No sooner had they reached the ground than each of the falcons began to pull its victim in pieces; but as soon as the falconers could come up, the lures were thrown out, and the falcons were allowed to make a meal of the pigeons, having been fasting for some hours before their flight. The pigeons were placed for them on the body of the heron; and after they were satisfied, they were again hooded and put up for the day.

The next cast consisted of two younger birds, and when let loose at another heron they flew up to it very well. But the heron was an old one, and was supposed to have been attacked before; for the moment he saw his enemies below, he began to soar into the air, and set up a loud croak, and the two young falcons, not so experienced as the two older birds, would not attack the heron, but after flying about for some time, left him. On this, one of the falconers set up a peculiar call, to which the birds were accustomed, when one of them, from a great height in the air, immediately closed his wings, and darting down to the man who called him was taken in hand. The other falcon was not, however, so well trained or obedient, but continued to sail about in the air.

At length a heron approached, and she attacked it, but without success, and soon left it; at last a third heron crossed, which she attacked; and, after a short struggle, succeeded in bringing to the ground in the same manner as in the first instance. This last heron had its wings broken and the falconer killed it, but the other was taken alive, and afterwards turned out before a single falcon, which struck it down in a minute. It has been said, that if a heron were once taken by a falcon, it would never afterwards show any sport by soaring and endeavouring to escape. It was so with this one, for, as soon as it saw its enemy approaching, it appeared to lose all its powers, and merely made a trifling and awkward defence on the ground, where the falcon would speedily have killed him, had not the lure been thrown in her way.

Falconry, which has fallen into desuetude among ourselves, may be traced to high antiquity in different parts of Europe. It is still practised by the people of Asia, and by those of some part of Africa. Thevenot relates that some kind of falcons are used in the chase of the gazelle. They are so trained as to retard that animal in its course, that it may be captured by the dogs.

THE HOBBY.*

This beautiful bird is brown above; whitish and spotted with brown underneath; the thighs and the bottom of the belly are red, and it has a brown mark on the cheek. Its nest is found on very high trees. The female lays three or four whitish eggs, unequally spotted with olive-coloured points, and black spots somewhat larger. These birds usually prey on larks; but they also pursue greenfinches, bullfinches, sometimes quails, and, according to M. Temminck, some small river-birds. The hobby is common in France, Germany, and other countries of Europe, and is found even in the deserts of Tartary and Siberia. It is reported to leave England and some other countries in winter.

This bird is a kind of miniature peregrine falcon. The female weighs about nine ounces, the male still less, and their length is about twelve inches. And yet, though so small, this species is inferior to none in point of courage; its flight is wonderfully rapid, and is supported with undiminished vigour for a considerable time. This species was formerly trained for hawking, but more commonly used for taking partridges and larks with a net, which is termed *daring*, that is, the hobby was cast off, which so frightened the birds, that they readily suffered a net to be drawn over them.

The hobby has often been observed pursuing a lark, and it is astonishing to observe how dexterously the latter creature avoids the fatal strike until it becomes fatigued. When a hen harrier has joined in the chase, it has only been to be distanced by the hobby, which has made sure of its prize.

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* Falco Subbuteo.

THE GOSHAWK.*

This bird was called by the older writers the falcon gentle, and was reputed in the days of falconry to have been one of the most courageous of birds, flying, as it did, at the largest game. It is a larger bird than even the gyr-falcon, but it is shorter in the wings, and altogether less compact and powerful, while it is not nearly so elegant as the peregrine.

In the full-grown female, the general colour of the whole upper parts, the ear-coverts, and a streak continued thence to the shoulder is blackish brown, the back mottled, the edges of the ear-coverts relieved, and the quills and tail-feathers margined with light tints of reddish brown. The colours, though not showy, are well contrasted. The naked parts are yellow, the irides grey, and the eye very quick and penetrating.

The male is not above two-thirds of the length of the female, is not nearly so well-shouldered or winged, and altogether is a very inferior bird. It has the top of the head and neck much lighter, and a reddish tinge over the greater part of the body. The spots on the under parts are much fewer, much paler, and generally of an oval shape.

The favourite dwellings of the goshawk are the extensive wooded dells of the mountains, or the wild cliffs on the sea-shore, where it can nestle undisturbed, and yet be within reach of places abounding with the large birds and small quadrupeds on which it feeds. But it is one of the birds that pass away before the progress of civilisation; hence it never builds and is rarely ever seen in the Lowlands of Scotland, and still more rarely in England. In inland places it builds in the forests, and is generally found near these, because large birds are more abundant there than in the open wastes.

Where the goshawk abounds, it is very destructive to mountain game, especially when it kills the old birds and the broods perish. This bird is docile, and not difficult to train. On that account it was called a "gentil" falcon, at least in some of its plumages, through several tints of which the goshawks pass. Sometimes indeed they are, especially the males, nearly white, and at other times the same sex is tawny, with few markings.

The goshawk is not so prolific as the smaller falcons and hawks, the eggs seldom exceeding four. The young are of a much more red or dusty colour, especially on the under parts, than the mature birds.

In Syria there is a small variety of the gentil falcon which the inhabitants denominate Shaheen, and which is of so fierce and courageous a disposition that it will attack any bird, however large or powerful, which presents itself. "Were there not," says Dr. Russel, in his account of Aleppo, "several gentlemen now in England to bear witness to the fact, I should hardly venture to assert that, with this bird, which is about the size of a pigeon, the inhabitants sometimes take large eagles. The hawk, in former times, was taught to seize the eagle under the pinion, and thus depriving him of the use of one wing both birds fell to the ground together; but I am informed the present mode is to teach the hawk to fix on the back between the wings, which has the same effect, only that the bird tumbling down more slowly, the falconer has more time to come to his hawk's assistance; but in either case, if he be not very expeditious, the falcon is inevitably destroyed.

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* Astur Palumbarius.—Bech.

"I never saw the shaheen fly at eagles, that sport being disused in my time; but I have often seen him take herons and storks. The hawk, when thrown off, flies for some time in a horizontal line, not six feet from the ground, then mounting perpendicularly with astonishing swiftness, he seizes his prey under the wing, and both together come tumbling to the ground. If the falconer is not, however, very expeditious, the game soon disengages itself."

THE MERLIN.*

This may be regarded as one of the handsomest of our raptorial birds. It greatly resembles the peregrine, except in stature, but though less, its proportions are all most symmetrical, and the colours of the plumage, though somewhat similarly distributed, are more brilliant and better marked. It is also allied to that bird in its changes of plumage.

In pursuit of prey, the merlin does not often mount above it and rush down, as the peregrine generally does, but at once gives chase, closely following the victim through all its turns and windings to escape, and unless cover is at hand, is generally successful.

"This beautiful little hawk," says Mr. Lloyd, "visits us about October, and leaves us in the spring. Scarcely larger than a thrush, the courageous little fellow glides with the rapidity of thought on a blackbird, or fieldfare, sometimes even on the partridges, and striking his game on the back of the head, kills it at a single blow. The merlin is a very bold bird, and seems afraid of nothing. I one day winged one as he was passing over my head at a great height. The little fellow, small as he was, flung himself on his back when I went to pick him up, and gave battle most furiously, darting out his talons (which were as hard and sharp as needles) at everything that approached him. We took him home, however, and I put him into the walled garden, where he lived for more than a year. He very soon became quite tame, and came, on being called, to receive his food, which consisted of birds, mice, &c. So fearless was he, that he flew instantly at the largest kind of sea-gull or crow that we gave him. When hungry, and no other food was at hand, he would attend the gardener when digging, and swallow the large earth-worms when turned up. To my great regret we found the little bird lying dead under the tree in which he usually roosted; and though I examined him carefully, I could not find out the cause of his death.

"Although all these small hawks which frequent this country destroy a certain quantity of game, their principal food consists of thrushes, blackbirds, and other small birds.

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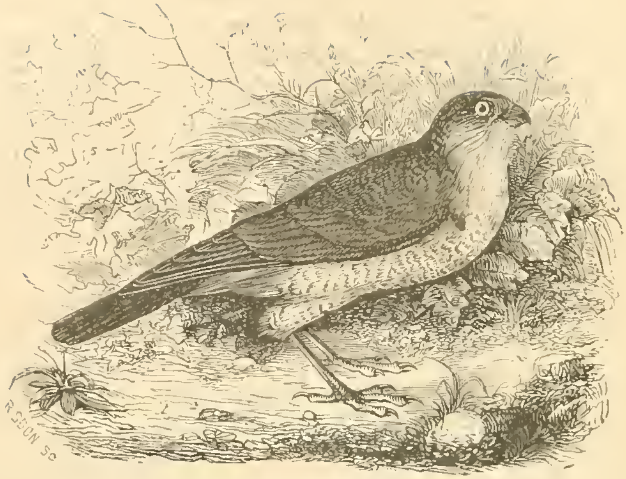
* Falco Cesalon.—Willoughby

In the winter, when the greenfinches collect in large flocks on the stubble fields, I have frequently seen the merlin or sparrow-hawk suddenly glide round the angle of some hedgerow or plantation, and taking up a bird from the middle of the flock, carry it off almost before his presence is observed by the rest of the greenfinches."

Sometimes two merlins hunt together, and, as it were, course a lark, or even swallow, in the air, the two hawks assisting each other in the most systematic manner. First one hawk chases the unfortunate bird for a short time, while his companion hovers quietly at hand: in a minute or so, the latter relieves his fellow-hunter, who in his turn rests. In this way they soon tire out the lark or swallow; and catching the poor bird in mid-air, one of the hawks flies away with him, leaving his companion to hunt alone till his return from feeding their young brood.



THE SPARROW-HAWK.*

It might be supposed, from the name of this bird, that sparrows were its only or favourite game. But though it shows its daring character by approaching houses in pursuit of them, it is a general and successful destroyer.

The male is one-fifth less than the female, the length of which is about fifteen inches. The female is, however, a more compact and powerful bird, and her additional weight is much greater than in proportion to her length. The upper parts of the male are bluish ash-colour, its throat and chest rufous, breaking into obscure bars; the tarsi yellow, and the beak black. The upper surface of the female is of a browner tinge than in the male, and the throat and under parts are white. The former have small longitudinal dashes of reddish brown, the latter regular transverse bars of the same colour. They build in thick bushes and low trees, sometimes forming a rude structure of twigs for themselves, and sometimes making use of the nest of some bird that breeds earlier.

Like all rapacious birds, the sparrow-hawk is most destructive during the breeding season. A great quantity of remains of partridges, wood-pigeons, and small birds has been found about their nests; though it is difficult to understand how so small a bird can convey a wood-pigeon to its young ones. Supposing either male or female sparrow-hawk to be killed during the time of incubation, the survivor immediately finds a new mate, who goes on with the duties of the last bird, whatever stage of the business is being carried on at the time, whether sitting on the eggs or rearing the young.

" Not content," says a naturalist, " with the partridges and other *feræ naturæ*, this bold little freebooter invades the poultry-yard. The hens scream, the ducks quack, and rush to the cover of the plantations; whilst the tame pigeons dart to and fro amongst the buildings, but in vain. The sparrow-hawk darts like an arrow after one of the latter birds, and carries it off, though the pigeon is twice or three times his own weight. The woman who takes care of the poultry runs out, but is too late to see anything more than a cloud of white feathers, marking the place where the unfortunate pigeon was struck. Its remains are, however, generally found at some little distance; and when this is the case, the hawk is sure to be caught, as he invariably returns to what he has left. Sometimes he returns the same day to finish picking the bones of the bird, but often does not come back for two or three. In the mean time, whatever part of the pigeon he has left is pegged to the ground, and two or three rat-traps are set round it, into one of which he always contrives to step. When caught, instead of seeming frightened, he flies courageously at the hand put down to pick him up, and fights with beak and talons to the last. Occasionally, when standing still amongst the trees, or even when passing the corner of the house, I have been startled by a sparrow-hawk gliding rapidly past me. Once one came so close to me that his wing actually brushed my arm; the hawk being in full pursuit of an unfortunate blackbird. On another occasion, a sparrow-hawk pursued a pigeon through the drawing-room window, and out at the other end of the house through another window, and never slackened his pursuit, notwithstanding the clattering of the broken glass of the two windows they passed through. But the most extraordinary instance of impudence in this bird that I ever met with, was one day finding a sparrow-hawk deliberately standing on a very large pouter pigeon on the drawing-room floor, and plucking it, having entered in pursuit of the unfortunate bird through an open window and killed him in the room."

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* Accipitur Nisus.—Linn.

A remarkable instance of the suddenness and rapidity with which the sparrow-hawk makes his attack was once witnessed by a friend of the writer. Walking along a tall hedge-row, which divided some fields; his notice was attracted by a song-bird—probably a linnet—which was not two yards distant, perched upon the top of a twig, and tuning forth its "native wood-notes wild;" rapid as an arrow something flitted by—the joyous strain was hushed—and the little melodist was far away, grasped in the talons of the sparrow-hawk."

A writer states, that when he was a boy he had a sparrow-hawk that used to accompany him through the fields, catch his game, devour it at leisure, and, after all, find him out wherever he went; nor, after the first or second adventure of this kind, was he ever afraid of losing it. A peasant, however, to his great mortification, one day shot the bird for having made too free with some of his poultry. It was about as large as a wood-pigeon; and this gentleman says he has seen him fly at a turkey-cock, and, when beaten, return to the charge with undaunted intrepidity: he had also known him to kill a fowl five or six times as big as himself.

THE KESTREL.*

The colour of the kestrel is red, spotted with black above; it is white, spotted with pale brown underneath; the head and tail of the male are ashy. It is common in almost all parts of Europe. It frequents the open country, woods, and old barns. It destroys a great number of small birds; it frequently darts on partridges and field-mice, and common mice, frogs, and even insects, become a portion of its nutriment.

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* Falco Tinninculus.—Gould

The nests of these birds consists of twigs and roots intermingled; sometimes they will content themselves with the old nests of crows. The female lays from five to six eggs, of a ferruginous colour, pale, and marked with deeper spots, irregularly distributed, and of different forms and sizes. The young are, at first, fed with insects, and afterwards with flesh brought by the parents.

The female is bolder and less wild than the male, and will come into gardens, and close to habitations. They hover at great elevations, describing a circle, and sustain themselves for a long time in the same place, by beating the air with their wings in an almost insensible motion. They repeat frequently, and with a sharp sound, a cry resembling the syllables *pri, pri, pri.* On perceiving their prey, they dart upon it with the directness and rapidity of an arrow. Should they not succeed in destroying it on the first attack, they continue to pursue it with extreme velocity and the utmost perseverance.

THE COMMON OR FORK-TAILED KITE.*

The common or fork-tailed kite is common, not only in England, but in most parts of Europe, and the adjacent districts of Africa. It may at once be distinguished from every British hawk by its peculiar and graceful flight. Hence its provincial name of *gled*, or *glede*, derived from a Saxon word, the origin of our word *to glide*, in allusion to its gliding along on pinions outspread, but motionless.

The sight of a kite, on a fine clear day, and when there is not a spot in the blue dome of heaven but itself, is indeed a very fine one. It seems as if the air moved it at its pleasure, and without the slightest effort. The wings and tail are expanded, and yet they appear hardly to move, as the bird ascends and descends, and whirls and turns, now in wide and sweeping circles, and anon dropping lower down, it turns fairly round on the point of the wing just as a pivot. After it has long beat over one pasture without success, and there is a hill, a wood, or any place not adapted to its habits, to be spread over before it makes the nest, the beauty and easy smoothness of its flight are absolutely unrivalled. Without the eagle's effort, it attains the eagle's altitude, and from its wondrous height surveys the land, only to shoot away to some distant place that may yield it a richer spoil.

The kite is partial to open downs and hilly districts skirted with woods: but it beats about in open places, and generally those where there is not much herbage on the ground. They are seldom seen over corn-fields, or places that are very thickly tangled with bushes, though they very often hover on the margins of the brakes, to pounce on mice, and also on young birds when these first venture from the nest. The cold swards by the sides of the upland streams, and the upland farms, where the pastures are thin and bare, and anything stirring on the ground can be easily discovered from the height at which the kite flies, are the places at which it is most frequently to be met with.

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* Milvus Ictinus.—Sav.

No sooner, therefore, does it wheel about, with eyes intent on the young broods which tenant the farm-yard, than it attracts the notice of the parent-birds, who set up a universal scream of execration; while, perhaps, the farmer is aroused to bring forth his gun, and stop, if he can, the further ravages of the intruder. But, though the gun may be discharged, the kite may wheel off in widening circles till out of danger. Should all be safe, it will, before long, take a downward sweep, scare the astonished broods, and bear away triumphantly its prey. Nor will it fail, when thus successful, to repeat its visits, until some trap holds fast the plunderer, or the farmer's gun brings him lifeless to the earth.

"Occasionally," says a naturalist, "I have seen this beautiful bird wheeling and soaring at an immense height; but English keepers and traps have nearly extirpated the kite in the north, as no greater enemy or more destructive foe to young grouse can exist. Their large and ravenous young require a large quantity of food, and the old birds manage to keep their craving appetite well supplied. Not only young grouse and black game, but great numbers of young hares are carried to the nest. Though a bird of apparently such powerful and noble flight, the kite appears not to be very destructive to old grouse, but to confine her attacks to the young broods. During the season of the year, too, when she has no young ones to provide for, carrion of all kinds forms her principal food. In consequence of her greedy disposition, the kite is very easily trapped. From her habit of following the course of streams, and hunting along the shores of the loch in search of dead fish, or drowned animals of any kind, one of the most successful ways of trapping the kite is to peg down the entrails of some animal in the shallow part of the water, and then to place the trap either on the shore immediately adjoining; or, what is often done, to form a small artificial promontory close to the bait, and to set the trap on this. The garbage catches the sharp eye of the bird, as she soars at a great height above it, and the clever trapper seldom fails in catching her in this manner."

The male and female birds differ little either in colour or size. The upper surface is entirely of a reddish brown, each feather being edged with a lighter tint. The feathers of the head and neck are long and pointed, of a dull grayish white, with longitudinal streaks of dusky brown. The under surface is of rust-colour, inclining to yellowish, with longitudinal dusky spots. The tail is twelve inches long, and much forked; it is of a bright reddish brown, with obscure dusky bands. The feathers of the thighs are long and loose, and the toes are bright yellow. The length of the kite is two feet two or three inches; the expanse of the wings five feet and a half.

Louis XVI., the king of France, had falcons called lanners brought from the counties and sent annually from Malta; they were larger than the peregrine, and much esteemed for flying at the kite. The kite, in consequence, obtained the name of Milan Royal, from the amusement it offered to royal parties. In England it was very differently employed; for, according to Sir John Sebright, "the forked-tailed kites were much flown, some years ago, by the Earl of Oxford, in the neighbourhood of Alconbury Hill. A great owl, to the leg of which the falconers usually tie a fox's brush, not only to impede its flight, but to make it, as they fancy, more attractive, is thrown up to draw down the kite."

THE SWALLOW-TAILED KITE.*

The *Falco furcatus* of Gmelin inhabits America. It is often called the Carolina, or swallow-tailed kite. It is white, with the wings and tail black; the two exterior of the quill feathers of the wing and tail are very long.

Audubon has given us the following description of the habitats and the habits of this bird. "A solitary individual of this species has once or twice been seen in Pennsylvania. Farther to the westward the swallow-tailed hawk has never, I believe, been observed. Travelling southward, along the Atlantic coast, we find it in Virginia, although in very small numbers. Beyond that state it becomes more abundant. Near the falls of the Ohio a pair had a nest and reared four young ones in 1820. In the lower parts of Kentucky it begins to become numerous; but in the states farther to the south, and particularly in parts near the sea, it is abundant. In the large prairies of the Attacapas and Oppelloursas, it is extremely common.

"In the states of Lousiana and Mississippi, where these birds are abundant, they arrive in large companies in the beginning of April, and are heard uttering a sharp plaintive note. At this period I generally remarked that they came from the westward, and have counted upwards of a hundred, in the space of an hour, passing over me in a direct easterly course. At that season, and in the beginning of September, when they all return from the United States, they are easily approached when they have alighted, being then apparently fatigued, and busily engaged in preparing themselves for continuing their journey, by dressing and oiling their feathers. At all other times, however, it is extremely difficult to get near them, as they are generally on wing through the day and at night rest on the higher pines and cypresses bordering the river-bluffs, the lakes, or the swamps of that district of country.

"They always feed on the wing. In calm and warm weather they soar to an immense height, pursuing the large insects called *musquito hawks*, and performing the most singular evolutions that can be conceived, using their tail with an elegance of motion peculiar to themselves. Their principal food, however, is large grasshoppers, green caterpillars, small snakes, lizards, and frogs. They sweep close over the fields, sometimes seeming to alight for a moment to secure a snake, and, holding it fast by the neck, carry it off, and devour it in the air. When searching for grasshoppers and caterpillars, it is not difficult to approach them under cover of a fence or tree. When one is then killed and falls to the ground, the whole flock comes over the dead bird, as if intent on carrying it off. An excellent opportunity is thus afforded of shooting as many as may be wanted, and I have killed several of these hawks in this manner, firing as fast as I could load my gun.

"The swallow-tailed hawk pairs immediately after its arrival in the southern states; and as its courtships take place on the wing, its motions are then more beautiful than ever. The nest is usually placed on the top branches of the tallest oak or pine-tree, situated on the margin of a stream or pond. It resembles that of a common crow extremely, being formed of dry sticks, intermixed with Spanish moss, and is lined with coarse grasses and a few feathers. The eggs are from four to six, of a greenish white colour, with a few irregular blotches of dark brown at the larger end. The male and the female sit alternately, the one feeding the other. The young are at first covered with a buff-coloured down; their next covering exhibits the pure white and black of the old birds, but without any of the glossy purplish tints of the latter. The tail, which at first is but slightly forked, becomes more so in a few weeks, and at the approach of autumn exhibits little difference from that of the adult birds. The plumage is completed the first spring.

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* Falco Furcatus.—Gmelin.

One of these birds was taken and killed at Balachoalish, in Argyleshire, in 1772; and another was captured alive in Shaw-gill, near Hawes, in Wensleydale, in Yorkshire, in 1805. The latter is said, apparently to avoid the violence of a tremendous thunder-storm, and the clamorous persecution of a flock of rooks which attacked it at the same instant, to have taken shelter in a thicket, where it was seized before it could extricate itself. It was not long, however, before it escaped from its captivity.

We add a brief description of two other hawks. The *Falco bidentatus* of Latham inhabits Brazil and Guiana. It is sometimes called the Notched falcon. Above it is gray, and brighter on the head and cheeks; beneath it is reddish, rayed with white; the throat and lower coverts are white; the bill is ash-gray; the feet and cere yellow. Its length is fourteen inches.

The other bird* is as large as a sparrow-hawk; the plumage is soft and silky; the tail but little forked, a sky-white above, white underneath, with the small curvature of the wings blackish. The young is brown, varied with yellow. This bird is common from Egypt to the Cape. It is also found in America, India, and New Holland. It hunts little else than insects.

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* Falco Menalopterus.—Daud.

THE COMMON BUZZARD.*

The Buzzards, though possessed of considerable bodily powers, are a slothful and inactive race. The beak is comparatively small and feeble; the tarsi variable, but generally short, and, in some instances, covered with short feathers to the toes; the wings are of considerable extent and rounded, the fourth quill feather being usually the largest; the tail is square or moderately rounded.

The common buzzard is one of the birds of prey frequently met with in most wooded portions of England, and over the whole of Europe. "In the north," Mr. Lloyd says, "the buzzard is gradually becoming rarer and rarer. The buzzard is a carrion-feeding bird, and seldom kills anything but small birds, mice, or frogs, excepting during the breeding season, when it is very destructive to game; at other times the buzzard lives an indolent life. After having satisfied her hunger, this bird will sit for hours perfectly motionless on some withered branch, or on a projecting corner of rock, whence she commands a good view of the surrounding country; and can easily detect the approach of danger. A cowardly bird, except when excited by hunger, she submits patiently to the attacks of the smaller birds, and flies from the magpie or jackdaw. Like the kite, the raven, the eagle, and all birds who feed much on carrion, the buzzard has a lofty flight when in search of food. Soaring high up in the air, and wheeling in circles, she appears to examine the surface of the land for many miles, in hopes of detecting some dead sheep or other carcase.

"The buzzard evinces little cunning in avoiding traps, and is easily caught. I have found their nests, containing from three to four large and nearly white eggs, in different situations; sometimes built on rocks, and at other times in the branches of a tree, at no great height from the ground. She sits close, and will allow the near approach of a passer by, before she leaves her eggs. Though she is one of the most ignoble of the hawk kind, I have a lingering affection for this bird, in consequence of her being connected in my remembrances with the rocky burns and hanging woods of the most romantic glens in the Highlands, where I have frequently fallen in with her nest and young."

Dr. Richardson observed the common buzzard in North America, as high as the fifty-seventh parallel of latitude, and considered that it went still further north. This bird visits the fur countries of that continent in the middle of April, and leaves by the end of September.

The following anecdote, which was related by M. Fontaine, curé of St. Pierre de Belesme, to the Comte de Buffon, will show that the buzzard may be so far tamed as to be rendered a faithful domestic. "In 1763, a buzzard was brought to me that had been taken in a snare. It was at first extremely wild and unpromising. I undertook to tame it: and I succeeded, by leaving it to fast, and constraining it to come and eat out of my hand. By pursuing this plan, I brought it to be very familiar; and, after having shut it up about six weeks, I began to allow it a little liberty: taking the precaution, however, to tie both pinions of its wings. In this condition it walked into my garden, and returned when I called it to feed. After some time, when I judged that I could trust to its fidelity, I removed the ligatures, and fastened a small bell, an inch and a half in diameter, above its talon, and also attached to the breast a bit of copper, having my name engraved on it. I then gave it entire liberty, which it soon abused, for it took wing, and flew as far as the forest of Belesme. I gave it up for lost; but four hours after I saw it rush into my hall, which was open, pursued by five other buzzards, who had constrained it to seek again its asylum.

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* Buteo Vulgaris.

"After this adventure, it preserved its fidelity to me, coming every night to sleep on my window; it grew so familiar, as to seem to take singular pleasure in my company. It attended constantly at dinner, sat on a corner of the table, and very often caressed me with its head and bill, emitting a weak, sharp cry, which, however, it sometimes softened. It is true that I alone had this privilege. It one day followed me, when I was on horseback, more than two leagues, flying above my head.

"It had an aversion both to dogs and cats; nor was it in the least afraid of them; it had often tough battles with them, but always came off victorious. I had four very strong cats, which I collected into my garden with my buzzard: I threw to them a bit of raw flesh; the nimblest cat seized it—the rest pursued; but the bird darted upon her body, bit her ears with his bill, and squeezed her sides with his talons so forcibly, that the cat was obliged to relinquish her prize. Often another cat snatched it the instant it dropped; but she suffered the same treatment, till the buzzard got entire possession of the plunder. He was so dexterous in his defence, that when he perceived himself assailed at once by the four cats, he took wing, and uttered a cry of exultation. At last, the cats, chagrined with their repeated disappointment, would no longer contend.

"This buzzard had a singular antipathy: he would not suffer a red cap on the head of any of the peasants; and so alert was he in whipping it off, that they found their heads bare without knowing what was become of their caps. He also snatched away wigs, without doing any injury; and he carried these caps and wigs to the tallest tree in a neighbouring park, which was the ordinary deposit of his booty.

"He would suffer no other birds of prey to enter his domain; he attacked them boldly, and put them to flight. He did no mischief in my court-yard; and the poultry, which at first dreaded him, grew insensibly reconciled to him. The chickens and ducklings received not the least harsh usage, and yet he bathed among the latter. But, what is singular, he was not gentle to my neighbour's poultry, and I was often obliged to publish that I would pay for the damages that he might occasion. However, he was frequently fired at; and, at different times, received fifteen musket shots without suffering any fracture. But once, early in the morning, hovering over the skirts of a forest, he dared to attack a fox; and the keeper, seeing him on the shoulders of the fox, fired two shots at him: the fox was killed, and the buzzard had his wing broken; yet, notwithstanding this fracture, he escaped from the keeper and was lost for seven days. This man, having discovered, from the noise of the bell, that he was my bird, came next morning to inform me. I sent to make search near the spot; but the bird could not be found, nor did it return till seven days afterwards. I had been used to call him every evening with a whistle, which he did not answer for six days; but on the seventh I heard a feeble cry at a distance, which I judged to be that of my buzzard. I repeated the whistle a second time, and heard the same cry. I went to the place from whence the sound came, and, at last, found my poor buzzard with his wing broken. He had travelled more than half a league on foot to regain his asylum, from which he was then distant about an hundred and twenty paces. Though he was extremely reduced, he gave me many caresses. It was six weeks before he was recruited and his wounds were healed: after which he began to fly as before, and follow his old habits for about a year; he then disappeared for ever."

Mr. Yarrell says: "The extreme partiality of the common buzzard to the seasonable task of incubation and rearing young birds, has been exemplified in various instances. A few years back, a female buzzard, kept in the garden of the Chequers Inn at Uxbridge, showed an inclination to sit, by collecting and bending all the loose sticks she could obtain possession of. Her owner, noticing her motions, supplied her with materials; she completed her nest, and sat on two hen's eggs, which she hatched and afterwards reared the young. Since then she has hatched and brought up a brood of chickens every year. She indicates her desire to sit by scratching holes in the ground, and breaking and tearing everything within her reach. One summer, in order to save her the fatigue of sitting, some young chickens just hatched were put down to her; but she destroyed the whole. Her family, in June, 1831, consisted of nine; the original number was ten, but one had been lost. When flesh was given to her, she was very assiduous in tearing and offering it as food to her nurslings, and appeared uneasy if, after taking small portions from her, they turned away to pick up grain."

THE ROUGH-LEGGED BUZZARD.

The head and the upper part of the neck, throat, breast, and thighs of this bird are of a pale rufous or reddish white; and regularly marked with longitudinal brown streaks. The upper surface is almost of a chocolate colour, each feather having a reddish margin. A broad girdle of dark brown passes across the lower part of the body just below the breast, and extends from wing to wing. The tail is of a pale rufous, varying with dark brown at its extremity. This bird is the most familiar example of the buzzard, having tarsi clothed with short close feathers to the toes.

"In its habits and form," says Mr. Garrett, "it resembles the common buzzard; and like that bird, it occasionally exhibits some deviation in the colour of the plumage from that which may be considered characteristic of the species. The rough-legged buzzard is much the more rare bird of the two; and although it has now been killed once, or oftener, in almost every county in England, it has rarely been known to breed here, and is usually observed in the spring and autumn, when changing its latitude from south to north, or *vice versâ*.

Le Vaillant found this bird in Africa. It inhabits the north of Europe, and southward it is scattered over that continent to the shores of the Mediterranean. It is common in several parts of the United States. Audubon saw it as far south as the eastern portion of North Carolina. He says it goes northward from thence to breed in March, and that it is more nocturnal in its habits than any other hawk in the same locality.

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* Buteo Lagopus.—Linn.

Dr. Richardson states that this species "advances east of the Rocky Mountains as high as the 68th parallel. It arrives in the fur countries in April or May, and having reared its young, retires southward early in October. It winters on the banks of the Delaware and Schuylkill, returning to the north again in the spring. It is by no means an uncommon bird in the districts through which the expedition under Sir John Franklin travelled; but being very shy, only one specimen was procured. A pair were seen at their nest, built of sticks, on a lofty tree, standing on a low moist alluvial point of land. They sailed round the spot in a wide circle, occasionally settling on the top of a tree, but were too wary to allow us to come within gun-shot. In the softness and fulness of its plumage, its feathered legs, and habits, this bird bears some resemblance to the owls. It flies slowly, sits for a long time on the bough of a tree, watching for mice, frogs, &c., and is often seen skimming over swampy pieces of ground, and hunting for its prey by the subdued daylight which illuminates even the midnight hours in the high parallels of latitude. Wilson observes, that in Pennsylvania it is in the habit of coursing over the meadows long after the sun has set. It is fitted for this nocturnal chase by the softness of its plumage, which contributes to render its flight noiseless, like that of an owl."

THE RED-TAILED AMERICAN BUZZARD.*

This species is peculiar to America, and is most frequently seen in the lower parts of Pennsylvania, during the severity of winter. Among the extensive meadows that border the Schuylkill and Delaware, below Philadelphia, where flocks of larks (*Alauda magna*) and where mice and moles are in great abundance, many individuals of this species spend the greater part of the winter. Others prowl around the plantations, looking out for vagrant chickens; their method of seizing which is by sweeping swiftly over the spot, and grappling them with their talons, they bear them away to the woods. One of these birds was surprised in the act of feeding on a hen he had just killed, and which he was compelled to abandon. The remains of the chicken were immediately baited to a steel-trap, and early the next morning the unfortunate buzzard was found a prisoner, securely fastened by the leg. The same hen, which the day before he had massacred, was, the very next, made the means of decoying him to his destruction;—in the eye of the farmer, a system of fair and just retribution.

This species inhabits the whole United States. "I believe," says Wilson, "it is not migrating, as I found it, in the month of May, as far south as Fort Adams, in the

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* Buteo Borealis.—Swains.

Mississippi territory. The young were, at that time, nearly as large as their parents, and very clamorous, making an incessant squeaking noise. One which I shot contained in his stomach mingled fragments of frogs and lizards."

THE AMERICAN BUZZARD.*

This bird, sometimes called the white-breasted hawk, is twenty-two inches long, and four feet in extent; the cere is pale green; the bill pale blue; the upper part of the head, sides of the neck, and back, are brown, streaked and seamed with white, and some pale rust; the wings are brown, barred with dusky; the breast pure white, with the exception of some slight touches of brown that enclose the chin; the legs are bright yellow, and feathered half-way down; and the tips of the wings reach to the middle of the tail.

"One of these birds," says Wilson, "which was shot on the wing, lived with me several weeks, but refused to eat. It amused itself by hopping from one end of the room to the other, and sitting for hours at the window, looking down on the passengers below. At first, when approached by any person, he was somewhat shy, but, after some time, he became quite familiar, permitting himself to be handled, and shutting his eyes, as if quite passive. Though he lived long without food, he was found, on dissection, to be exceedingly fat, his stomach being enveloped in a mass of solid fat of nearly an inch in thickness." In size and general appearance, these birds bear a considerable resemblance to those last described; and they frequent the same situations in winter.

THE HONEY BUZZARD.†

The genus Pernis, of which this bird forms the type, may be known by the close thick velvety feathers which occupy the space between the beak and the eye,—a space in all the other rapacious birds destitute of feathers, but partially clothed with long hairs radiating from a central point.

This bird is about the size of the common buzzard, nearly two feet in length, but rather more slender; the crown of the head is of a pure bluish ash-colour; the upper surface deep brown, inclining to grayish. The secondary quill-feathers are barred alternately with dusky brownish gray; the under surface is whitish, with triangular reddish bars of black brown. The honey buzzard derives its name from the partiality it shows for bees, wasps, and their larvæ, as food; while it preys also on small quadrupeds and reptiles, but not when these can be obtained.

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* Falco (sub-genus Buteo) Borealis.—Bonap.

† Pernis Apivorus.—Cuv.

Thus Sir William Jardine says:—"The distance around Twizel (Berwickshire) appears to have something attractive to this species, for within these few years several specimens have been procured, both in the adult and immature plumage. One of these birds was accidentally observed to rise from the situation of a wasp's nest, which it had been attempting to excavate, or, in fact, to a certain extent had accomplished; and the large hole which had been scraped showed that a much greater power could be employed, and that the bird possessed organs much better fitted to remove the obstacles which generally concealed its prey, than a superficial examination of the feet and legs would warrant us in ascribing to it. A few hours afterwards, the task was found to be entirely completed, the comb torn out and cleared from the immature young; and after dissection proved that at this season (autumn), at least, birds or mammalia formed no part of the food. A steel trap, baited with the comb, secured the aggressor in the course of the next day, when he had returned to renew the scene of his previous havoc."

In the "Magazine of Natural History," there is a notice of one of these birds, which was shot in Pendring Hall Park, Suffolk. "The person who killed it saw it first on the ground; there were several wasps' nests near the spot. On dissecting it," says the writer, "I found a quantity of wasps and nymphæ from the comb, both in its craw and stomach, with a few small beetles. . . . It would be highly interesting could we be made acquainted with the manner in which this bird conducts the attack on the wasps' nest. . . . The hawk, in order to get at the comb, must in some way enlarge the entrance: the legs and claws of the bird I have described were very dirty, even to the knee, most likely from searching much on the ground for food, and using them in making an entrance into the wasps' nest. . . . The close feathering round the base of the bill is, in all probability, intended as a protection against the stings of these insects when seized and in the act of being crushed between the mandibles."

Willoughby observes, that "the honey buzzard builds its nest of small twigs, laying upon them wool, and upon the wool its eggs. We saw one that made use of an old kite's nest to breed in, and that fed its young with nymphæ of wasps; for in the nest we found the comb of wasps' nests, and in the stomachs of the young, fragments of wasp maggots. There were in the nests only two young ones, covered with white down, spotted with black. Their feet were of a pale yellow; their bills, between the nostrils and the head, white; their craws large, in which were lizards, frogs, &c. In the crop of one of them we found two lizards entire, with their heads lying towards the mouth, as if they sought to creep out."

White tells us, in his "Natural History of Selborne," that a pair of honey buzzards built them a large shallow nest, composed of twigs, and lined with dead beechen leaves, upon a small slender beech, near to Selborne Hanger. In the middle of the month of June, a bold boy climbed this tree, though standing on so deep and dizzy a situation, and brought down an egg, the only one in the nest, which had been sat on for some time, and contained the embryo of a young bird. The egg was smaller and not so round as the egg of the common buzzard; was dotted at each end with small red spots, and surrounded in the middle with a broad and blood-red gore.

The honey buzzard inhabits Russia, Sweden, Denmark, and Norway. It is found in Germany, France, Italy, and generally in the south of Europe. Mr. Gould observed it in collections of skins from India: and it is said to be a native of the East.

THE MARSH HARRIER.*

The harriers are birds of considerable size, power, and extent of wing, very indefatigable in hunting, and highly destructive of the feathered tribes. They have not the grandeur of the falcons, nor all the vigour of the hawks, nor are they so powerfully armed as either of these birds. Their beaks and feet are more feeble, and their claws smaller. They fly very low and strike their prey on the ground, that prey consisting more of young birds and of females when they are sitting than that of the hawks, as the prey of the hawks consist of less powerfully winged birds than that of the falcons.

It is from this habit that the name of "harrier," synonymous with that of plunderer, is derived; sometimes they are called "harpies;" and as they often beat the bushes so low that their feet touch, it is possible that they may have given rise to some of the fabulous accounts of griffins, one of the characters of which was supposed to be a combination of the functions of flying and walking. The harriers, it is true, do not combine these; but they fly so near the ground, and have their feet so ready for assisting in the capture of any prey they may spy, that they often appear as if the feet were concerned in assisting their motion.

The largest British bird of the genus is the marsh harrier. It is found not only in England, Ireland, Wales, Scotland, and the Hebrides, but in many parts also of northern and southern Europe. It has also been observed in Smyrna, Trebizond, Egypt, and Tripoli; and our eminent naturalist, Mr. Gould, has received specimens of it from the Himalaya Mountains. It varies in length from twenty-one to twenty-three inches.

The changes which this bird undergoes in its plumage, according to age, has led to many mistakes, each stage having suggested the idea of a distinct species. Recent observations have counteracted these errors, clearly distinguishing between this and other birds; and also precisely defining the varied peculiarities of its growth. When fully adult, its head, neck, and breast are of a pale dull yellowish hue, each feather having a central streak of brown; the upper surface is brown, the quill feathers being white at their origin and black throughout the remainder of their length; the secondaries and tail feathers of an ashy gray, the under parts rufous, marked with yellowish dashes, the beak black, the cere greenish, and the tarsi yellow. The general plumage during the first year is of a deep chocolate, the feathers of the wing-coverts, quills, and tail being tipped with light brown; and the top of the throat of a yellowish brown. The transition is then gradual from this stage to the maturity of the bird.

Heaths and wild marshy lands are the favourite haunts of the marsh harrier. It is accustomed to skim the ground, and then drop suddenly on its prey. Moles, mice, young rabbits, and other small quadrupeds, together with frogs and other reptiles, become, in consequence, the easy spoil of this marauder of silent wing.

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* Circus Rufus.—Selby.

THE HEN HARRIER.*

So greatly do the sexes in this species differ, both in size and plumage, that they have often been described as different birds, and astonishment has been expressed that the female and nest of the gray one, which is the male, could never be found. Even in the same sex, the colours are not a little perplexing; for in all birds, where there are remarkable differences of plumage in the sexes, and a passage from the plumage of one to the other, as there generally is, there are not only always individuals in some of the intermediate stages of the plumages, but there are others in which the change never completely takes place, and some in which the plumage of the other sex is partially assumed. Colours vary also with differences of age, situation, and season; so that difference of colour is never a sufficient foundation for difference of species. Far more dependence should be placed on a similarity of situation and habits.

"There is a diversity of opinion," says Mr. Lloyd, "as to whether the hawk commonly called the ringtail is the female of the hen harrier. I have, however, no doubt at all on the subject. The ringtail is nothing more than the female or young bird. The male does not put on his blue and white plumage till he is a year old. I have frequently found the nest of both on the mountain, where they build in a patch of rough heather, generally by the side of a burn, and also in a furze-bush."

The full-grown female harrier is about twenty inches long, and three feet and a half in the extent of its wings. The naked parts are yellow. The irides are dark brown. The prevailing colours of the bird are brown and dusky white. The head is mottled brown on the upper part. The concha round the eyes is brown, immediately surrounding that organ, but terminates on a white eyebrow, which reaches to the cere of the beak, and it is white below, but terminates in a brown border. This appendage gives an expression to the eye, perfectly distinct from that of any other tribe. The feathers below are brown, with pale margins, and pass into white at the tail coverts; the upper part is brown, lightest in the scapulars and lesser coverts, and the margins of the feathers are lighter. The tail is brown, with dusky bars, and the quills of the wing very deep brown, inclining to black.

The breast, head, and all the upper part of the male are of a fine gray, lighter on those parts of the concha which are white in the female, and also where the brown is lighter on the upper part of that bird. The remainder of the under part is white, with very faint markings; indeed all the markings on the male bird are obscure and faint; but, notwithstanding that, and the difference of size and expression of the eyes,—the irides being yellow in the male and brown in the female,—the shape and the air of the birds correspond exactly.

The hen harrier exists in each of the great divisions of the globe. Dr. Richardson observes, that "it is a common species on the plains of the Saskatchewan, seldom less than five or six being in sight at a time, each keeping to a particular beat, until it had completely examined it. Their flight was in general low; but though Mr. Drummond and I watched them for hours at a time, and lay as still in the grass as possible, they invariably rose out of gunshot as they passed over our heads, and the specimens were procured only by lying in ambush near the nest. Notwithstanding they appeared to be almost constantly on the wing, we seldom saw them carry anything away; and they seemed on the whole to be less successful hunters than the little *Falco sparverius*, or the lazy buzzards, that sat watching for their prey on the bough of a tree. A small green snake is very plentiful in that quarter, and forms a considerable portion of the food of this bird, whence its name of the ‘snake hunter.’ The nests that we observed were built on the ground, by the sides of small lakes, of moss, grass, feathers, and hair, and contained from three to five eggs, of a smaller size than those of a domestic fowl; but similar in shape, and having a bluish white colour without spots.”

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* Falco Cyaneus.

A gentleman, who was shooting in Hampshire, by chance sprung a pheasant in a wheat-stubble, and shot at it; when, notwithstanding the report of the gun, it was pursued by a hen harrier, but escaped into some covert. He then sprung a second, and a third, in the same field, and these likewise got away; the hawk hovering round him all the while he was beating the field, conscious, no doubt, of the game that lurked in the stubble. “Hence,” says Mr. Jesse, “we may conclude that this bird of prey was rendered very daring and bold by hunger, and that hawks are not always in a condition to strike their game. We may further observe, that they cannot pounce on their quarry when it is on the ground, where it might be able to make a stout resistance; since so large a fowl as a pheasant could not but be visible to the piercing eye of a hawk, when hovering over it. Hence that propensity in game to cowering and squatting till they are almost trod on; which doubtless was intended as a mode of security, though it has long been rendered destructive by the invention of nets and guns.”

“In the autumn,” says another naturalist, “my partridges suffer much from the hen harrier. As soon as the corn is cut, this bird appears and hunts the whole of the low country in the most determined and systematic manner. The hen harrier, either on the hill-side or in the turnip-field, is a most destructive hunter. Flying at the height of only a few feet from the ground, he quarters the ground as regularly as an old pointer, crossing the field in every direction; nor does he waste time in hunting useless ground, but tries turnip-field after turnip-field, and rushy-field after rushy-field, passing quickly over the more open ground, where he thinks his game is not so likely to be found. The moment he sees a bird, the hawk darts rapidly to a height of about twenty feet, hovers for a moment, and then comes down with unerring aim on his victim, striking dead with a single blow partridge or pheasant, grouse or blackcock, and showing a strength not to be expected from his light figure and slender though sharp talons.

“I saw on a hill-side in Ross-shire a hen harrier strike a heath hen, I instantly drove him away, but too late, as the head of the bird was cut clean off by the single stroke as if done with a knife. On another day, when passing over the hill in the spring, I was attended by a hen harrier for some time, who struck down and killed two hen-grouse, that I had put up. Both these birds I contrived to take from him; but a third grouse rose, and was killed and carried off over the brow of a hill before I could get up to him. There is no bird more difficult to shoot than this. Hunting always in the open country though appearing intent on nothing but his game, the wary bird, with an instinctive knowledge of the range of shot, will keep always just out of reach, and frequently carry off before your face the partridge you have flushed, and perhaps wounded.

"Though very destructive to grouse and other game, this bird has one redeeming quality, which is, that he is a most skilful rat-cather. Skimming silently and rapidly through a rick-yard, he seizes on any incautious rat who may be exposed to view; and from the habit this hawk has of hunting very late in the evening, many of these vermin fall to his share. Though of so small and light a frame, the hen harrier strikes down a mallard without difficulty; and the marsh and swamp are his favourite hunting-grounds. Quick enough to catch a snipe, and strong enough to kill a mallard, nothing escapes him. Although so courageous in pursuit of game, he is a wild, untameable bird in captivity; and though I have sometimes endeavoured to tame one, I could never succeed in rendering him at all familiar. As he disdains to eat any animal not killed by himself, he is a very difficult bird to trap. The best chance of catching him is in what is called a pole-trap, placed on a high post in the middle of an open part of the country; for this hawk has (in common with many others) the habit of perching on upright railings and posts, particularly as in the open plains, where he principally hunts, there are but few trees, and he seldom perches on the ground. His flight is leisurely and slow when searching for game; but his dart, when he has discovered his prey, is inconceivably rapid and certain."

The nest of the hen harrier, consisting of small sticks and coarse grass, is placed on the ground. The eggs are four or five in number, and are either white or of a light blue. Its flight is low, but smooth, graceful, and very swift. As the hen harrier will admit of a nearer approach, so it can be better observed than most of the birds of prey.

A hen harrier that was shot some years ago near London, was first observed dodging round the lower part of some old trees, and now and then seeming to strike against the trunks of them with its beak or talons, but still continuing on the wing. The cause of this very singular conduct could not even be guessed till after it was killed, when on opening its stomach, nearly twenty small brown lizards were found there, which it had artfully seized, by coming suddenly round upon them. They were each bitten or torn into two or three pieces.

These destructive birds may be caught by means of a trap, baited with a stuffed rabbit's skin and covered nicely over with moss. They breed annually on the Cheviot Hills; nd from a hen harrier and ringtail having been shot on the same nest, it appears that hese are not two distinct species, however different they may be in appearance, but in eality the male and female of the same.

THE OWLS.

THE BARN OWL.

The third family of the Order of *Accipitres* now demands our attention; the *Strigidæ*, or owls. Some of these are *diurnal*, and other *nocturnal* birds.

Evening is indeed a time which it becomes the naturalist to improve, as well as the hours preceding its arrival. Gilbert White, so deeply interested in natural objects, gives peculiar prominence to the feathered tribes, as he says:—

"When day declining sheds a milder gleam,
What time the May-fly haunts the pool or stream;
When the still owl skims round the grassy mead,
What time the timorous hare limps forth to feed;
Then be the time to steal adown the dale,
And listen to the vagrant cuckoo's tale;
To hear the clamorous curlew call his mate,
Or the soft quail his tender pain relate;
To see the swallow sweep the darkening plain,
Belated, to support her infant train;

To mark the swift in rapid giddy ring,
Dash round the steeple, unsubdued of wing:
Amusive birds! say where your hid retreat.
When the frost rages and the tempests beat;
Whence your return, by such nice instinct led,
When Spring, soft season, lifts her blooming head?
Such baffled searches mock man's prying pride,
The God of Nature is your secret guide!
While deepening shades obscure the face of day,
To yonder bench leaf-sheltered let us stray,
Till blended objects fail the swimming sight,
And all the fading landscape sinks in night;
To hear the drowsy dor come brushing by,
With buzzing wing, or the shrill cricket cry;
To see the feeding bat glance through the wood;
To catch the distant falling of the flood;
While o'er the cliff th' awakened churn owl hung,
Through the still gloom protracts his chattering song;
While high in air, and poised upon his wings
Unseen, the soft enamour'd wood-lark sings;
These, Nature's works, the curious mind employ,
Inspire a soothing melancholy joy;
As fancy warms, a pleasing kind of pain
Steals o'er the cheek, and thrills the creeping vein!
Each rural sight, each sound, each smell, combine;
The tinkling sheep-bell, or the breath of kine:
The new mown hay that scents the swelling breeze,
Or cottage chimney smoking through the trees,
The chilling night-dews fall;—away, retire!"

The greater proportion of the birds hunt by night, or during the sweet but sombre hours of twilight. Their flight is light, buoyant, noiseless, and performed by slow but regular flapping of the wings. Their food, like that of most birds of prey, is various; but they seem to prefer mice and similar small quadrupeds, probably because the habits of these minute creatures are, like their own, nocturnal. Owls are solitary, seldom more than a pair being found together, although the woodcock owl (*otus brachystus*) is seen, during autumn, in small conjoined families, flocks of ten or twelve together; and the Arkansa owl of America may be described as gregarious. "There is something," says Wilson, "in the character of the owl so recluse, solitary, and mysterious, something so discordant in the tones of its voice, heard only amid the silence and the gloom of night, and in the most lonely and sequestered situations, as to have strongly impressed the minds of mankind in general with sensations of awe and abhorrence of the whole tribe. The poets have indulged freely in this general prejudice, and in their descriptions and delineations of midnight storms, and gloomy scenes of nature, the owl is generally introduced to heighten the horror of the picture."

Look at the owl, however, and it will be seen that its structure accords with the circumstances in which it is placed. The beak, though concealed by the margin of the disc or circle of feathers on each side, radiating from the eyes, is powerful and strongly curved. The talons are singularly hooked, acute, and also highly retractile; while the outer toe is capable of being directed either forwards or backwards, that it may strengthen the grasp, claw being opposed to claw. Should the reader have ever had an owl settle on his arm or his hand, he will have an adequate remembrance of the hold which this bird can take, so precisely adapted to its mode of life.

And, then, who is not struck by the huge head of the owl? That is the seat of organs specially demanding our admiration. There is an ear of wondrous mechanism; the auditory cavities within the skull are prodigiously enlarged, and the external orifice is proportionate, concealed between two extensive and membraneous valves, from the edges of which proceed the feathers which form the outer view of the disc which encircles the face. The leaves of the double valve are capable of being thrown apart, so as to give the freest entrance to every slight vibration of the air, and then to concentrate it; and the effect is increased by cavities connected with the internal mechanism so widely diffused, that the owl hears with the greatest distinctness the faintest noise, as the cry of a mouse, or even its rustle among the straw.

No less remarkable is the organ of sight than that of hearing. The eyes of the owl are expressly adapted to the subdued light of evening and night; the pupils being capable of great dilatation. At that season the eyes of a cat may be seen to glare with an unwonted brightness, and in this there is a resemblance to those of the owl. But the latter are inferior in power to the former; and hence the provision of the *nictitating membrane*, to which allusion has already been made. During the day, the nocturnal hunter remains in his retreat, with half-closed eyes, the membraneous curtain being drawn over them; but when the shades of evening are gathering, the membranes are folded up at the corner angles within the socket, and the eyes, fully opened, are perfectly ready for the chase.

The head of the owl, enlarged for this remarkable provision, has a globular contour from the peculiar arrangement of the plumage which covers it. The top of it is garnished, in many species, with two elongated tufts, commonly called ears, from their appearance, and capable of being erected and depressed. And, then, how full, soft, and downy is the whole plumage! Other birds produce sounds by their movements. Who has not heard the whistling rush of the fleet-winged pigeon, or the whirring of the pheasant rising in the air? But those who have observed the owl skimming round the farm-yard, or along the hedge-row, are aware that it is peculiarly buoyant and noiseless; and this is owing to the plumage, so loose and soft, and yielding instantly to any breath.

THE SNOWY OWL.*

The name of this bird is derived from the whiteness of its plumage, which is only interrupted on the head and neck by a few minute dots of dull brown, and the rest of the body by regular streaks of the same colour, but narrower and lighter on the under than the upper surface. These streaks do not extend to the legs, which are covered down to the claws by long, thick, shaggy, hair-like feathers. The whole of the plumage is extremely soft, close, and thick, affording a most effectual defence from the severities of weather, to which this bird is constantly exposed in the Arctic regions, which it inhabits. Even the beak is almost entirely buried in the discs of the eyes, which advance internally to a much greater extent than on the outer side. The iris is of a bright golden yellow; the tail short, scarcely extending beyond the wings; and the bill and claws strongly curved and of a deep black. The full-grown female, which is rather larger than the male, measures two feet in length, and more than five in the expanse of its wings; and is consequently by far the largest, but without the tufts of feathers on its head, with which we are acquainted.

The Snowy Owl is an occasional visitant of Great Britain, and not very infrequent in the Orkney and Shetland Islands. It migrates from the Arctic regions of both the Old and New World, on the approach of winter, but without passing to the southward of the colder portions of the temperate zone. It frequently hunts by day, and indeed if it did not do so, what would become of it in those far northern countries "where a sleepless summer of long light" knows not for months the refreshing influence of nocturnal darkness? It preys not only on quadrupeds and birds, but frequently strikes its talons into fish, and bears them astonished from their moist abode into the leafy recesses of the forest. Its own flesh is said to be white and well flavoured; and when in good condition, is eaten both by the native Indians and the residents in the fur-countries.

THE EAGLE OWL.†

The great eagle owl is a native of a great part of Europe, and is said to extend eastwards as far as Kamschatka, and to be found even at the Cape of Good Hope. It appears to be most abundant in Russia and Germany, but is rarely seen in France or

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* Noctua Nyctea.

† Stryx Nyctea.

England. It inhabits clefts of the rocks or deserted buildings in the mountains, and rarely descends into the plains. Occasionally flying abroad in the day-time, it preys most in the dusk, and feeds not only on mice, rats, and moles, but even on young rabbits, hares, and fawns.

M. Cronstadt has recorded a pleasing instance of the attachment of these birds to their young. This gentleman resided several years on a farm in Sudermania, near a steep mountain, on the summit of which two eagle owls had their nest. One day in the month of July, a young one, having quitted the nest, was seized by some of his servants. This bird, after it was caught, was shut up in a large hen-coop; and the next morning M. Cronstadt found a young partridge lying dead before the door of the coop. He immediately concluded that this provision had been brought thither by the old owls, which he supposed had been making search in the night-time for their lost young one, and had been led to the place of its confinement by its cry. This proved to have been the case, by the same mark of attention being repeated for fourteen successive nights. The game which the old ones carried to it consisted principally of young partridges, for the most part newly killed, but sometimes a little spoiled. One day a moor-fowl was brought, so fresh, that it was still warm under the wings. A putrid lamb was also found at another time, probably what had been spoiled by lying too long in the nest of the old owls; and it is supposed that they brought it merely because they had no better provision at the time. M. Cronstadt and his servant watched at a window several nights, that they might observe, if possible, when this supply was deposited. Their plan did not succeed; but it appeared that these owls, which are very sharp-sighted, had discovered the moment when the windows were not watched; as food was found to have been deposited for the young before the coop one night when this had been the case.

In the month of August the parents discontinued this attendance; but at that period all birds of prey abandon their young to their own exertions. From this instance it may be readily concluded how great a quantity of game must be destroyed by a pair of these owls during the time they employ in rearing their young. And as the edible species of forest animals repair chiefly in the evening to the fields, they are particularly exposed to the acute sight, smell, and claw of the birds of the night.

"An eagle owl, in my possession," says a naturalist, "remains quiet during the day, unless he is shown some prey, when he becomes eager to possess it; and, when it is put within his reach, at once clutches it, and retires to a corner to devour at leisure. During night he is extremely active, and sometimes keeps up an incessant bark. It is so similar to that of a cur, or terrier, as to annoy a large Labrador house-dog, who expresses his dissatisfaction by replying to him, and disturbing the inmates nightly. I at first mistook the cry also for that of a dog, and, without any recollection of the owl, sallied forth to destroy this disturber of our repose; and it was not until tracing the sound to the cage, that I became satisfied of the author of the annoyance. I have remarked that he barks more incessantly during a clear winter night than at any other time, and the thin air at that season makes the cry very distinctly heard to a considerable distance. This bird also shows a great antipathy to dogs, and will perceive one at a considerable distance; nor is it possible to distract his attention so long as the animal remains in sight. When first perceived, the feathers are raised, and the wings lowered, as when feeding, and the head moved round, following the object while in sight; if food is thrown, it will be struck with the foot, and held, but no further attention paid to it.

THE BARN OWL.

The white owl seeks the antique ruined wall,
Fearless of rapine ; or, in hollow trees,
Which age has cavern'd, safely courts repose ;

and while it is the most common, is, at the same time the most useful, and in its plumage, perhaps the most beautiful of all the British owls. It is also extensively spread throughout Europe, Asia, and America. The general colour of this bird on the upper part is yellowish brown, and on the under part white. The upper part is streaked, spotted, and sprinkled with white, gray, and dusky. Its length is thirteen inches.

It has obtained the name of the Screech Owl from its cries, which are repeated at intervals, and rendered loud and frightful from the stillness of the night. It is on this account considered, among the superstitious, a bird of unwelcome omen. Shakspeare observes—

"It was the owl that shrieked, the fatal bellman,
Which gives the stern'st good night."

The highly ingenious and intelligent naturalist, Mr. Waterton, says, "Up to the year 1813, the barn owl had a sad time of it at Walton Hall. Its supposed mournful notes alarmed the aged housekeeper. She knew full well what sorrow it had brought into other houses when she was a young woman ; and there was enough of mischief in the midnight wintry blast, without having it increased by the dismal screams of something which people knew very little about, and which everybody said was far too busy in the churchyard at night time. Nay, it was a well-known fact, that if any person were sick in the neighbourhood, it would be for ever looking in at the window, and holding a conversation outside with somebody, they did not know whom. The gamekeeper agreed with her in everything she said on this important subject ; and he always stood better in her books when he had managed to shoot a bird of this bad and mischievous family. However, in 1813, on my return from the wilds of Guiana, having suffered myself, and learned mercy, I broke in pieces the code of penal laws which the knavery of the gamekeeper and the lamentable ignorance of the other servants had hitherto put in force, far too successfully, to thin the numbers of this poor, harmless, unsuspecting tribe. On the ruin of the old gateway, against which, tradition says, the waves of the lake have dashed for the better part of a thousand years, I made a place with stone and mortar, about four feet square, and fixed a thick oaken stick firmly into it. Huge masses of ivy now quite cover it. In about a month or so after it was finished, a pair of barn owls came and took up their abode in it. I threatened to strangle the keeper if ever, after this, he molested the old birds or their young ones ; and I assured the housekeeper that I would take upon myself the whole responsibility of all the sickness, woe,

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* Strix Flammea.—Linn.

and sorrow that the new tenants might bring into the hall. She made a low curtsey, as much as to say, 'Sir, I fall into your will and pleasure;' but I saw in her eye that she had made up her mind to have to do with things of fearful and portentous shape, and to hear many a midnight wailing in the surrounding woods. I do not think that, up to the day of this old lady's death, which took place in her eighty-fourth year, she ever looked with pleasure or contentment on the barn owl, as it flew round the large sycamore trees which grew near the old ruined gateway."

Mr. Waterton, indeed, founded a colony of owls, and found that the number of mice they destroyed were immense. So true are the words of Butler:—

"While moonlight, silvering all the walls,
Through every mouldering crevice falls,
Tipping with white his powdery plume,
As shades or shifts the changing gloom;
The owl that, watching in the barn,
Sees the mouse creeping in the corn,
Sits still, and shuts his round blue eyes,
As if he slept—until he spies
The little beast within his stretch,
Then starts, and seizes on the wretch!

THE BURROWING OWL.*

One of the most curious of owls in its habits is the burrowing species of the New World. These birds inhabit the burrows of the marmot, and consequently dwell in open plains. They seem to enjoy even the broadest glare of the noon-day sun, and may be seen flying rapidly along in search of food or pleasure during the prevalence of the cheerful light of day. They manifest but little timidity, allow themselves to be approached sufficiently close for shooting, and though some or all may soar away, they settle down again at no great distance. If further disturbed, they either take a more lengthened flight, or descend into their subterranean dwellings, from whence they are dislodged with difficulty. When the young are only covered with down, they frequently ascend the entrance to enjoy the warmth of the mid-day sun; but as soon as they are approached, they quickly retire within their burrow. In North America the burrowing owl feeds chiefly on insects—in the West Indies (if the species are identical,) on rats and reptiles.

M. C. L. Bonaparte also describes a burrowing owl, which is a native of "the trans-Mississippian territories of the United States, and which resides exclusively in the villages of the marmot or prairie-dog" (Viscacha,) "whose excavations are so commodious as to render it unnecessary that our bird should dig for himself, as he is said to do in other parts of the world, where no burrowing animals exist. These villages are very numerous, sometimes covering only a few acres, and at others spreading over the surface of the country for miles together. They are composed of slightly elevated mounds, having the form of a truncated cone, about two feet in width at the base, and seldom rising so high as eighteen inches above the surface of the soil. The entrance is placed either at the top or on the side, and the whole mount is beaten down externally, especially at the summit, resembling a much-used footpath."

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* Strix Cunicularia.—Bonap.

"In all these prairie-dog villages, the burrowing owl is seen moving briskly about, or else in small flocks scattered among the mounds, and at a distance it may be mistaken for the marmot itself, when sitting erect. They manifest but little timidity, and allow themselves to be approached sufficiently close for shooting; but, if alarmed, some or all of them soar away again and settle down at a short distance; if further disturbed, their flight is continued until they are no longer in view, or they descend into their dwellings, whence they are difficult to dislodge. The burrows into which these owls have been seen to descend, on the plains of the river Platte (Plata,) where they are most numerous, were evidently excavated by the marmot; whence it has been inferred by Sury, that they were either common, though unfriendly, residents of the same habitation, or that our owl was the sole occupant acquired by the right of conquest. The evidence of this was clearly presented by the ruinous condition of burrows tenanted by the owl, which were frequently caved in and their sides channelled by the rains; while the neat and well-preserved mansion of the marmot showed the active care of a skilful and industrious owner. We have no evidence that the owl and marmot habitually resort to one burrow; yet we are well assured by Pike and others that a common danger often drives them into the same excavation, where lizards and rattle-snakes also enter for concealment and safety."

THE HORNED OWL.*

This bird is one-fourth larger than the common species, and, like it, yellow, dotted with brown, and vermiculated on the wings and back; but the belly is striped across with narrow lines. It is a native of Africa, but sometimes appears in Europe.

The Great Horned Owl † is spread from the Arctic regions to the Straits of Magellan. "His favourite residence," says Wilson, "is the dark solitudes of deep swamps covered with a growth of gigantic timber; and here as soon as evening draws on, and mankind retire to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim as he slumbers by his forest fire."

Dr. Richardson relates an instance which came to his own knowledge, of the consequences arising from a visit of this nocturnal wanderer.

"A party of Scotch Highlanders, in the service of the Hudson Bay Company, happened in a winter journey, to encamp after nightfall in a dense clump of trees, whose dark tops and lofty stems, the growth of more than one century, gave a solemnity to the scene that strongly tended to excite the superstitious feelings of the Highlanders. The effect was heightened by the discovery of a tomb, which, with a natural taste often exhibited by the Indians, had been placed in this secluded spot. Our travellers having finished their supper, were trimming their fire, preparatory to retiring to rest, when the slow and dismal notes of the horned owl fell on the ear with a startling nearness. None of them being acquainted with the sound, they at once concluded that so unearthly a voice must be the moaning of the spirit of the departed, whose repose they supposed they had disturbed, by inadvertently making a fire of some of the wood of which his tomb had been constructed. They passed a tedious night of fear, and, with the first dawn of day, hastily quitted the ill-omened spot."

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* Strix Ascalaphus.—Viellot.

† Bubo Virgianus.

INSESSORES.

ORDER II.—THE PERCHING BIRDS.

The designation which discriminates the second order into which birds are classified has been selected to indicate a point of resemblance which obtains among them in the absence of any more marked characteristics. The ground for associating them together is, indeed, rather of a negative kind, comprehending those birds which are neither swimmers, nor waders, nor climbers, nor rapacious, nor gallinaceous; yet among which may be traced a general similarity of structure, and especially such an insensible merging of one group into another, that it is difficult to arrange them into rigid subdivisions. Without having the ferocity of appetite which we have seen to characterise the Accipitres, they are not, on the other hand, restricted, like the gallinaceous birds, to a regimen of grain and vegetables; but, in accordance with varied modifications of the beak and of the digestive organs, they feed upon insects, fruit, and grain, or upon all combined. Some, however, which possess a tolerably strong bill, are even found to pursue small birds.

Their stomach is in the form of a muscular gizzard. As among them are the singing birds, the most complicated conformations of the lower larynx are apparent. The proportional length of their wings, and the extent of their flight, are as variable as their mode of life. Their sternum has usually but one slope on each side at its lower edge; but there are two in some birds of this order.

In consequence of the diversity of members of this order, and the difference in many important respects between them, it has been found necessary to subdivide them into primary sections or tribes, in order to avoid the inevitable confusion which would otherwise follow. These are four in number, and have been designated as follows:—1, Fissirostres; 2, Dentirostres; 3, Conirostres; 4, Tenuirostres; each tribe being further arranged into several families.

TRIBE I.—FISSIROSTRES.

The designation of this tribe is derived from the width of gape of the bill possessed by a considerable number of the birds of the Insessorial order. In combination with this power of grasping their prey, they are also gifted with extraordinary powers of flight; so that with the utmost velocity of motion there is a tirelessness of wing which no effort seems able to subdue. This capacity of flight is, indeed, an essential qualification, when it is remembered that it is upon winged food that they have to obtain their subsistence, in order to secure which great velocity is obviously necessary.

The Family placed first in order under this tribe comprehends the Goatsuckers, which, in some important respects, are intimately associated with some members of the Accipitres, which we have just left; and may be remarked in passing as one of the innumerable illustrations which are furnished of the gradational character of the works of nature. To this we have now to advert.

THE GOATSUCKERS.

THE NIGHT JAR.[*]

The goatsuckers, or night jars, are birds of nocturnal habits, issuing forth at twilight to spend the night in search of food, when they may be found gently fanning their way along in pursuit of various insects which are also on the wing. The beautifully subdued and blended tones of gray and brown which chequer their plumage well amalgamate with the season when they go forth, and greatly aid in their concealment from their prey ; while the width of their gape renders it impossible to miss those they may pursue. In order to give additional security to their hold, the edges of the mandibles are furnished on each side with a row of strong bristles, capable of diverging or contracting by means of muscles attached to their roots. Their eyes are large, and of that kind designated nocturnal ; their plumage is diversified with black, brown, ferruginous, and white, while the under parts have numerous undulated transverse lines. The legs are very short, scaly, and feathered below the knee, and their toes are arranged with three before and one behind, but the hind one can be brought forward. The weight of the bird is between two and three ounces, and its full length is about ten inches.

The goatsuckers have derived their name on account of the ridiculous notion that they suck the teats of goats ; and this story, absurd as it is, may be traced to the days of Aristotle. In the ninth book of his "History of Animals," he says, that this bird flies upon the goats and sucks them, and adds, that not only do the mammæ sucked become dry, but the goat becomes blind. Pliny and Ælian also narrate this story, the latter expressing his astonishment at the wonderful audacity of the bird, it being fearless of the vengeance of the goatherds. The explanation of the story is to be found in the fact that many of the insectivorous birds are seen hovering near the bodies of cattle and sheep whilst grazing, in order to prey on the insects which may be there ; but this habit is common to many genera of birds, and does not give any support to the notion in question, which is entirely incompatible with their organization. Nor is this the only false accusation made against this bird. White, in his "Natural History of Selborne," tells us that the country people believe the night jar, which is another name for this bird, to be the cause of a fatal disease among calves.

This is a solitary bird. Two of them are rarely seen together, and even then they preserve a tolerable distance from each other. It frequents mountains and plains, almost always conceals itself under a bush, or in the young coppices, and seems to prefer dry and stony soils, and those which are covered with briers.

It generally roosts on the ground, preferring the contiguity of woods ; and if it perches on the limb of a tree, it sits lengthwise, and seldom across like most other birds ; this peculiarity probably arising from the shortness and slender form of its legs and feet, which are not calculated to enable it to take a firm grasp of a branch.

This semi-nocturnal bird never quits its retreat but towards twilight ; or if it ever do so, it is only in sombre and cloudy weather, for it is dazzled by a strong light. The feeblest degree of light suits it best. If it happen to be disturbed and roused of a fine day, its flight is low and uncertain. The reverse, however, is altogether the case after the setting of the sun. It is then quite lively and active in its flight, which is necessarily irregular, like that of the winged insects which constitute its prey, and which it can only seize by short and rapid zigzags.

Caprimulgus Europœus.

This bird has one habit peculiar to itself; it will make about one hundred turns in succession the circuit of a large leafless tree, with an irregular and very rapid flight. From time to time it will drop abruptly down, as if to fall on its prey, and then suddenly rise again in the same manner. At such times it is exceedingly difficult to bring it within range of shot, for, on the advance of the fowler, it disappears so rapidly that it is impossible to discover the place of its retreat.

We must not expect from this bird, remaining during the day in a sombre and solitary state of inaction, an elegant and artificially constructed nest, which requires the bright beams of the sun and the love of labour. A small hole at the foot of a tree, or of a rock, and sometimes even in the naked and beaten ground, is the place where the female deposits her eggs. These are oblong, lightly shaded, and marbled with blackish points on a white ground. It is said she hatches them with the greatest solicitude, and that when she discovers they have been observed, she changes their place, by pushing them forward dexterously with her wings, into some other spot, and sometimes even carrying them with her bill.

The night jar is migratory. It arrives in our climates in spring, and departs in autumn. These birds are found from the most northern parts of Europe even into Africa. They pass the month of April in Malta, whither they are carried by the south-east wind, and where they are also found in great numbers in the autumnal season. They do not arrive in England until towards the end of May, and they leave it about the middle of August. They remain later in France, and may be seen even in November. It is stated that many birds of this species have been killed in the woods of Vosges, in the middle of winter and in the depth of snow. Still, however, this must be very rarely, as, at such periods, the insectivorous birds must experience the greatest difficulty in procuring an adequate supply of aliment.

The solitude of an evening walk is sometimes strangely disturbed by this bird. Suddenly, perhaps, a jarring vibratory sound, like that of a spinning-wheel, strikes upon the ear, then ceases for a moment, and soon recurring with increased volume, and then again ceasing, the form of a bird is seen, and as swift as an arrow, and noiseless as a shadow it skims past, and then settling on a branch the jarring sound recurs.

> "Hark! from yon quivering branch your direst foe,
> Insects of night, its whirring note prolongs,
> Loud as the sound of busy maiden's wheel;
> Then, with expanded beak, and throat enlarged
> Even to its utmost stretch, its 'customed food
> Pursues voracious."

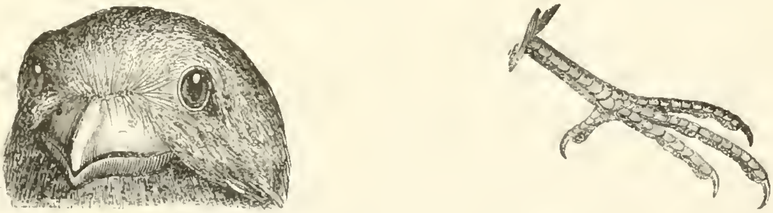
During the season of incubation, the male maintains a most vigilant watch against the intrusion of enemies. Wilson, who describes an American species of this bird, mentions that at the time of sitting, the male may usually be seen playing about in the air over the place, even during the day, mounting by several quick vibrations of the wings, then a few slower, uttering all the while a sharp, harsh squeak, till, having gained the highest point, he suddenly precipitates himself, head foremost, and with great rapidity down sixty or eighty feet, wheeling up again as suddenly, at which instant is heard a loud booming sound, very much resembling that produced by blowing strongly into the bung-hole of an empty hogshead. This is believed to be occasioned by the sudden expansion of his capacious mouth while he passes through the air. Having completed these gymnastic exercises, by which, doubtless, he imagines the preservation of his family to be materially promoted, he again mounts by alternately quick and leisurely motions of his wings, playing about as he ascends, uttering his usual hoarse squeak, till in a few minutes he repeats the impetuous descent previously made. During the time the female is sitting, she will suffer a stranger to approach within a foot or two before she attempts to stir, and then she flutters and limps away in a manner so much resembling a wounded bird, as to deceive almost every one into this idea, and by thus drawing him into pursuit, she effects the safety of her nest. This "pious fraud," as Thomson designates it, is only continued till she has enticed the intruder some distance away, when she mounts and sweeps out of sight.

The *Leona* goatsucker is remarkable for a long single feather issuing from the wing, the shaft being without web till near the end, where the web is broad. This feather is much longer than the bird itself. The species, as to colour, is assimulated to the common goatsucker.

The *cayenne,* or white-necked goatsucker of Latham, is said to be less nocturnal in its habits than the other species; it is also more sociable, frequenting the vicinity of highways, nor does it move until approached very closely, and then only to a short distance. It is said to utter two sorts of cry; one like that of the toad, and another which has been compared to the barking of a dog; while uttering the former it is said to shake the wings.

THE PODARGUS.

The genus *podargus* differs from that of caprimulgus in some important respects. The beak is larger and longer, having a wider gape, the head is considerably larger, and the whole bird is of superior size. Thus the horned podargus of Sumatra* might, from the shape of the head, the large staring eyes, and the plumelets into which the ear-coverts are elongated, be easily mistaken for an owl, especially also, as its nocturnal habits would countenance and confirm the presumption. The *podargus cinereus* of Vieillot is a good illustration of the genus. It is found chiefly in New Holland and Tasmania. It is nocturnal in its habits, finding its haunts in the forest retreats, where, seated on the lower branches of a tree, not far from the trunk, and with its feathers raised, it passes the day. So profound is its immoveability and apparent insensibility, that it may almost be taken by the hand; but as soon as the twilight of evening returns, it goes forth in pursuit of prey, which it continues till about two hours before sunrise the following morning. The nest is roughly built of small sticks and grass, and the female lays from two to four eggs.



HEAD AND FOOT OF THE PODARGUS CINEREUS.

The *nyctibius grandis*† of Vieillot is a remarkable specimen of this race. Its plumage is red, and is divided by oblique and irregular black bands, partially marked with white marks; the feet are flesh-colour.

The *steatornes caripensis*‡ was discovered in America by Humboldt and Bonpland, on their excursion to the mountains of Caripe in Cumana. Here they entered an immense cavern, where a curious sight and still more strange sounds awaited them. We are assured that it is indeed very difficult to form an adequate conception of the frightful noise which smote upon their ears, from the thousands of birds who dwelt in this dark abode, and as the sounds they uttered were re-echoed in the caverns around. The Indians, who guided the visitors, fixed their torches at the end of long poles, and thus showed the nests of the birds, which were fifteen or sixteen feet overhead. The noise of the terrified inmates increased as the intruders advanced; and when at length it ceased for some minutes around the travellers, the same doleful cries might be heard sounding through the other caverns which extended in various directions. The Indians enter these caves once a year, armed with poles, with which they destroy the greater part of the nests. They also kill many thousands of the birds, and the old ones, as they defend their broods, hover around the heads of their assailants, and utter the most melancholy cries.

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* Podargus Cornutus.

† Nyctibius Grandis.—Vieill.

‡ Humboldt.

WHIP-POOR-WILL. *

An interesting species of this family is the whip-poor-will—a name which it has obtained from the peculiarity of its cry. It is a migratory bird, visiting the United States on the approach of spring, preferring the more barren districts of Kentucky, and the country through which the Alleghany ridges pass, but it is also found in the thinly wooded portions of the middle districts. There it may be seen skimming along in the moonlight by quick turns and zigzag evolutions in pursuit of insects, and retreats at the return of the first beams of the sun to repose on some fallen trunk, or log, or even on the ground.

The songs of these birds may be heard at every twilight, and, should there be moonlight, with only occasional intermissions till break of day. Audubon tells us that hundreds are often heard at the same time in different parts of the woods; and he adds, that when you are told that the notes of this bird may be heard at the distance of several hundred yards, some idea may be formed of the pleasure which every lover of nature must feel during the time when the chorus is continued.

The nest of the whip-poor-will consists merely of the matted luxuriance of herbage and withered leaves which may be found in any retired thicket. The young are covered with down, having a tint which makes them resemble little mouldy patches, as if a bit of decayed wood lay among the leaves. Wilson one day was passing along the brow of a rocky declivity when one of these birds arose from his feet and fluttered along, sometimes prostrating herself and beating the ground with her wings, as if just expiring. Aware of her purpose, he stood still and examined the ground, in order to find the nest from which she was trying to divert his attention; but after a long search he was just about to abandon the pursuit, when he perceived something like a slight mouldiness among the withered leaves, and discovered it to be a young whip-poor-will seemingly asleep, and about a week old. He left it where he found it; but having occasion to return to the same spot in about ten minutes afterwards for a pencil he had dropped, he discovered the pencil, but the young bird had been removed. It is believed that this was effected by the parent.

"In the state of Kentucky," says Wilson, "I first heard this bird on the 14th of April, near the town of Danville. Its notes, from the ideas which are naturally associated with them, seem like the voice of an old friend, and are listened to by almost all with great interest. At first, they issue from some retired part of the woods, the glen, or mountain; in a few evenings perhaps we hear them from the adjoining coppice, the garden-fence, the road before the door, and even from the roof of the dwelling-house, long after the family have retired to rest. Some of the more ignorant and superstitious consider this near approach as forboding no good to the family—nothing less than sickness, misfortune, or death, to some of its members. These visits, however, so often occur without any bad consequences, that this superstitious dread seems on the decline."

The favourite places of resort for these birds are on dry, high situations; in low, marshy tracts of country they are seldom heard. It is probably on this account, that

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* Caprimulgus Vociferus.—Wilson.

they are scarcer on the sea-coast and its immediate neighbourhood; while towards the mountains they are very numerous. The night-hawks, on the contrary, delight in these extensive sea-marshes, and are much more numerous there than in the interior and higher parts of the country. But in that tract of country in the state of Kentucky, called "the Barrens," appears to be their most congenial climate and place of residence. There, from the middle of April to the 1st of June, as soon as the evening twilight draws on, the shrill and confused clamours of these birds are incessant, and very surprising to a stranger. They soon, however, become extremely agreeable; the inhabitants lie down at night lulled by their whistlings; and the first approach of dawn is announced by a general and lively chorus of the same music.

The whip-poor-will is nine inches and a half long, and nineteen inches in extent. The bill is blackish, a full quarter of an inch long, of considerable strength, and bent a little at the point. The nostrils are prominent and tubular. The mouth is very large, and beset along the sides with a number of long, thick, elastic bristles, the largest of which extends more than half an inch beyond the point of the bill, end in fine hair, and curve inwards. They seem to serve as feelers, and prevent the escape of winged insects. The eyes are very large, full, and bluish-black. The plumage above is so variegated with black, pale cream, brown and rust colour, sprinkled and powdered in such minute streaks and spots as to defy description. The female is about an inch less in length and extent, agreeing, in some respects with the male, but differing in others. For example, she is much lighter on the upper parts, and seems as if powdered with grains of meal.

The *collared* goatsucker, probably the *C. Asiaticus*, or Bombay goatsucker of Latham, was observed by Levaillant on the banks of the Gamtoo, in Africa, where it is very common.

During the time of incubation the male begins its loud and singular song about an hour after sunset, and if the night be fine, continues till daylight. The female lays two white eggs, with the shells so exceedingly thin and brittle, that it requires great caution to handle without breaking them. Notwithstanding this, the bird deposits these eggs frequently in the middle of the path. The male sits as well as its female, and when so occupied, the bird will not move on the approach of any one until in actual danger of being trodden on. After the eggs have been touched, they are sure to be removed, and probably, to a considerable distance.

Levaillant found another species of goatsucker in South Africa, remarkable for its size,—this was the *forked-tailed* goatsucker. This character of tail is unique in this genus. It is six-and-twenty inches long from the point of the bill to the extremity of the tail, which is the last lateral one on each side. The bill of this bird is of an enormous width, and terminates in a small hook. The lower mandible covers the upper at the corner of the mouth, by a small projecting edge, and the upper by a sort of lid covers again the lower, which last is fairly enclosed, as far as a very marked notch about the middle of the upper. After this notch, the upper mandible becomes suddenly very narrow, and boxes itself in the lower, which is conformed to receive it with a proper edge, and is itself finally surmounted by the end of the upper one, which holds it firmly, and curves beyond it in the form of a hook.

From this perfect union of the two mandibles, this bird appears, when the mouth is closed, to have a very small bill. "Those who imagine," says M. Levaillant, "that these birds always fly with their mouths open, are very grossly deceived. They frequently place themselves on the ground, for the purpose of collecting the insects there, and in taking them on the wing, it does not appear necessary that they should keep the mouth gaping open. We find the bee-eaters, the martins, and all the swallows, take insects on the wing, and we never see them open the bill until the moment they are near enough to snatch them up. It is probable that the goatsucker does the same."

THE SWALLOWS.

The Second Family of the passerine order is composed of the birds so familiar to all in this country as well as to the people in many other lands—the swallows or *hirundinidæ*. The birds of this race are characterised by those peculiarities of beak to which attention has been directed in connexion with the preceding family. Their tarsi are exceedingly short and small, and the toes are armed with hooked nails, which give them great tenacity of hold when clinging to the perpendicular walls of buildings or cliffs. As their food consists only of insects, which have to be captured on the wing, these birds are also endowed with great vigour and activity of flight, and they are enabled to sweep through the air with that velocity and grace which ever makes their movements interesting to contemplate.

THE SWIFT.*

The swift is one of the largest birds connected with this family. It appears in this country early in May, having winged its flight from the shores of Africa, probably by the same route as that pursued by the swallow and martin. The steeples of our village churches may then be seen surrounded by them, where they wheel their rapid courses in pursuit of food, while their nests will be found beneath the eaves or tiles of some of the adjoining houses. Their nests are composed of dried grass, lined with feathers, bits of rag or feathers apparently glued together with some mucous secretion, which is believed to be produced from the bird. The eggs are usually two in number, though there are occasionally more; they are white in colour and oblong in shape. The hen is very tenacious of her duties during the season of incubation, but having sat hard all day, she will rush out just before dark, snatching a scanty meal, and stretching her stiff and weary limbs for a few minutes; she then returns to her nest. At night both parent birds sit on the nest, or at any rate both roost in the same hole.

It is a remarkable fact, which has been ascertained by Dr. Jenner, that the swallow tribe—as well as probably some other birds—having absented themselves for such long intervals as are consumed after their migration, yet return not only to the same country but to the same spot where they were reared, or where they have reared broods before. Thus the swift, after roaming in other and distant lands for some nine months, will visit the identical place where it spent its summer the preceding year. In order to certify the truth of this, Dr. Jenner procured several swifts, and by taking off two claws from the feet of twelve, he fixed upon them an indelible mark. The year following their nesting places were examined in an evening when they had retired to roost, and there he found several of the marked birds. The second and third years his experiments were repeated, and with the same results; and no less than seven years afterwards, a cat was seen to bring a bird into a farmer's kitchen in the neighbourhood, and this was proved to be one of those which had been originally marked for observation.

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* Cypselus Apus.

It has been observed by some naturalists that swifts have great partiality for sultry weather, when thunder storms are approaching, and that at such times they fly about in small parties with peculiar violence, and as they pass near steeples, and corners of buildings, utter loud screams, which have been interpreted by White, in his Natural History of Selborne, as a kind of serenade to their respective females. "This," remarks Selby, is "fanciful and pretty;" but he reasons from these data to a different conclusion, considering the action and cry as the consequences of irritability, occasioned by the highly electrical state of the atmosphere at such times.

The swift is very seldom, if ever, seen to alight upon the ground, which it would find great difficulty in doing, in consequence of the shortness of its legs and the length of its wings; but, by the aid of its strong toes and hooked claws, it adheres with ease against the perpendicular face of walls or rocks. It is often, during the summer months, on the wing for at least sixteen hours in the day; and in the longest days it does not go to roost till nearly nine o'clock, spending the last few moments before it retires with groups of its race high in the air, and shooting about with wonderful velocity.

The swift has a very short beak, triangular at the base, and the gape extending beyond the eyes. The whole plumage is black, except the chin, which has a whitish tinge. The wings are very long, the tail is forked, and it has four toes, all placed forward—in this last respect deviating from a characteristic of the swallow genus.

THE CHIMNEY SWALLOW.*

The swallow is a general favourite with all classes of the community. Its ingeniously constructed nest, its summer stay, its singularly rapid flight, and its strange departure during the winter months, have given it an interest in the eyes of many which is not felt for others of our feathered friends. Gilbert White tells us, that when he saw the swallows and martins clustering on the chimneys and thatch of the neighbouring cottages, he felt a peculiar regard for them, especially when they manifested those strong impulses of instinct towards migration which had been implanted in them by the Creator.

"The swallow," says Sir H. Davy, in his "Salmonia," "is one of my favourite birds, and a rival of the nightingale; for he glads my sense of seeing as much as any other does my sense of hearing. He is the joyous prophet of the year—the harbinger of the best season; he lives a life of enjoyment among the loveliest forms of nature; winter is unknown to him; and he leaves the green meadows of England in autumn, for the myrtle and orange groves of Italy, and for the palms of Africa; he has always objects of pursuit, and his success is secure. Even the beings selected for his prey are poetical, beautiful, and transient. The ephemera are saved by his means from a slow and lingering death in the evening, and killed in a moment, when they had known nothing of life but pleasure. He is the constant destroyer of insects—the friend of man; and, with the stork and the ibis, may be regarded as a sacred bird. The instinct which gives him his appointed seasons, and which teaches him always when and where to move, may be regarded as flowing from a divine source; and he belongs to the oracles of nature, which speak the awful and intelligible language of a present Deity."

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* Hirundo Rustica.—Linn.

The arrival of the first swallow, though it does not *make* a summer, yet betokens the advent, in all its loveliness, of that bright and beautiful season of the year. Many, as they see the bird, are ready to exclaim with the poet:—

"Welcome, welcome, feather'd stranger,
  How the sun bids nature smile;
Safe arrived, and free from danger,
  Welcome to our blooming isle!
Still twitter on my lonely roof,
  And hail me at the dawn of day,
Each morn the recollected proof
  Of Time that ever fleets away.

"Fond of sunshine, fond of shade,
  Fond of skies serene and clear;
E'en transient storms thy joy invade
  In fairest seasons of the year.
What makes thee seek a milder clime?
  What bids thee shun the wintry gale?
How know'st thou thy departing time?
  Hail! wondrous bird! hail, swallow, hail!

"Sure something more to thee is given
  Than myriads of the feather'd race,
Some gift divine, some spark from heaven,
  That guides thy flight from place to place.
Still freely come, still freely go,
  And blessings crown thy vigorous wing;
May thy rude flight meet no rude foe,
  Delightful messenger of spring!"

The swallow is known in most parts of the world. It has been called the chimney swallow, from the partiality which many of them often exhibit of choosing chimneys in which to build their nests, but they are usually seen beneath the eaves of our village dwellings, though sometimes they may be found in the shafts of old coal pits; and White remarks that he has seen them at Sorn, in Ayrshire, Musselburgh, near Edinburgh, and in other places. When they choose strange spots in which to have their "local habitations," they appear altogether to disregard the noise and disturbance which may be incident to them, yet which would be sufficiently alarming under ordinary circumstances.

The nest of the swallow is formed of small portions of moist clay, which it has previously mingled at the edge of a pond or ditch, which is moulded with bits of straw and bents of grass into the open saucer-like nest with which all are so familiar. The eggs are generally from four to six in number, white, but speckled with ash colour or dark red. They appear, however, glad of an occasion of deviating from ordinary rules, and thus, not only are bell turrets often resorted to, but in one case the half open drawer of a deal table in an unused garret was made available, while in another instance a pair of swallows attached their nest to the body of an owl which was nailed against a wall.

On the young first leaving the nest, they perch for a few days on the roof of the house, or on the chimney top, where they are fed by the parent birds, and where they seem as if labouring to collect their scattered thoughts. Their earliest lesson is then to take some short flight to a neighbouring roof or tree, and having thus exercised themselves, and been fed, they gradually learn to use their pinions, and at a still later period, to obtain sustenance for themselves.

When the verdure of summer is mellowing into the deeper tints of autumn, when the golden sheaves are safely lodged in the barn or the stack, and when the frosty nights and misty mornings show that the evening of the year has come on, the swallows prepare for their departure to more genial climes. At length, directed by that unerring instinct which the Almighty has implanted within them, they take their trackless way. And as we view them congregating together, and marshalling their hosts for flight, we may say:—

"Then, where more balmy winters smile,
Speed thee to blest Hesperian isle,
Lybia's warm shores, or palmy Nile,
On wings of wind:
Taught by His voice, who bids thee know
Thy season, when to come and go,
To seek our genial skies, or throw
Our storms behind.

"Farewell, sweet bird! thou still hast been
Companion of our summer scene,
Loved inmate of our meadows green,
And rural home:
The twitter of thy cheerful song,
We've loved to hear; and all day long
See thee on pinion, fleet and strong
About us roam.

"And dost thou no wise love impart?
Yes, still thou bidd'st us act our part
With body prompt and willing heart,
While summer lasts:
Prepared the course to take, that He
For us appoints, who summons thee
To climes of grateful warmth to flee
From wintry blasts."

THE MARTIN.*

The martin, or window swallow, is the least of the family that visit this country. It usually appears a few days later than the swallow, probably commencing its flight at the same time, but having a smaller wing it is unable to fly as rapidly as its "companions in travel." The quiet beauty by which it is characterised, the grace of its flight, the confidence which it obviously reposes in man in the choice of its dwelling, and its useful and unostentatious habits, entitle it to the regard with which it is welcomed by all classes of the community.

The formation of its nest has been referred to by Pliny. "Surely," he remarks, "in no one thing is the wit of sillie birds more admirable. The swallows frame their nests of clay and earth, but they strengthen and make them fast with straw. In case at any time they cannot meet with soft and tough clay, for want thereof they wet and drench their feathers with good store of water, and then bestrew them over with dust." While the building of the nest is in progress, the martin may frequently be found in the neighbourhood of damp places, moulding the clay which is to form the walls, and for this purpose, as M. Vieillot asserts, selecting worm casts as the best material. This probably acquires an increased tenacity from the saliva which it is believed is mingled with it. In confirmation of this, it has been observed that the clay which has just been added in the formation of the walls of the nest has much more moisture in it than that of the places from which it has been taken; while the possession on the part of the bird of large salivary glands adds still further corroboration. Pennant mentions that the martins sometimes build in cliffs overhanging the sea, and in the romantic and beautiful dell of Hawford, in Ayrshire, some may be found among the wooded rocks, at the base of which winds the river Ayr.

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* Hirundo Urbica.—Linn.

The martin lays four or five eggs, after an incubation of thirteen days. This bird is inferior in size to the common swallow. The whole of the upper parts are characterised by their beautifully blue-black glossy appearance, while the under parts are white. The legs are covered with a white down, and the claws are white. The tail is blue-black, and forked.

THE SAND-MARTIN.*

The sand-martin, or, as it is termed by the Spaniards, the mountain butterfly, is another species of swallow. It selects as the spot where its nest shall be made the high banks of rivers, railway cuttings, and other vertical surfaces of earth which are not of material too hard to resist its efforts. It avoids rocky and clay districts, because the material would be unsuitable to their operations. Having determined on a suitable situation, which is generally such as has been employed by others of its race in past years, the little miner forms a horizontal orifice, with a degree of regularity and an amount of labour which is rarely exceeded among birds. The beak of the sand-martin is very hard, sharp, and admirably adapted for digging, and though small, its shortness increases its strength. Clinging to the face of a sand-bank, it strikes with its bill as a miner would with a pickaxe, till it has loosened a considerable portion of the hard sand, which it tumbles down the face of the cliff. Some of these holes are cut with such precision as to appear to have been marked out with a pair of compasses, while others are irregular in form; but this seems rather to arise from the crumbling away of the sand than from any deficiency in skill. The bird always uses his own body to determine the proportions of the gallery; it perches on the circumference with its claws, and works with its bill from the centre outwards. It consequently assumes all positions while at work at the inside, hanging from the roof of the gallery with its back downwards as often as standing on the floor; and sometimes it has been seen wheeling round in this manner on the face of a sand-bank, when it was just breaking ground, to begin its gallery. To this it is owing that all the galleries are more or less tortuous in their termination; and there a bed of loose hay, and a few of the smaller breast feathers of geese, ducks, or fowls, are spread with little art for the reception of the eggs. It is worthy of remark that the bird always scrapes the loose sand with his feet which it has detached by its bill; but so carefully is this accomplished that it does not remove the unmined sand, or disturb the true level of the floor.

It has been observed that there are holes sometimes unfinished by these birds, the tunnelling being carried on for some distance, and then left uncompleted. This has led to the supposition that it is an intentional preparation for the following year; but it is most probable that this view of the case would be to ascribe too much of foresight in these operations. It is more likely that the cause of their being unfinished arises from their encountering some stratum of earth, which is too harsh or hard for their purpose, or that it is too soft and friable to be stable, and having discovered this fact, the bird makes a preference of a new locality in which to have its habitation.

The sand-martin lays from four to six eggs, resembling those of the house-martin in appearance. The nestlings are largely supported by gnats and other small insects, and are sometimes fed with dragon-flies almost as long as themselves. In the last week of

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* Hirundo Riparia.—Linn.

June, they have been seen perched in a row on a rail, and so young and helpless as easily to be taken by the hand; whether the parent-birds feed them when on the wing, as is the case with swallows and martins, is undetermined.

These birds are very sociable in disposition, and colonise the same localities in great numbers. In some neighbourhoods they congregate in such numbers that when disturbed, they fly out of their nests and fill the air like flies, and they swarm in immense multitudes along the banks of the Ohio and Kentucky in the New World. White tells us that the sand-martin is *ferá naturá*, at least in some parts of this kingdom, disdaining all domestic attachments, and haunts wild heaths and commons; while the other species are remarkably gentle and domesticated, and never seem to think themselves safe but under the protection of man.

THE ESCULENT SWALLOW.*

The esculent swallow, or salangane, is a native of the Eastern Archipelago, and has received its designation from the fact that its nest is regarded as a great delicacy for the table by the Chinese and others of the Asiatics. But while writers in general agree as to the value which the epicure sets upon this article of diet, much diversity of opinion prevails as to its nature and history. Some indeed assert that the nests have no ta steat all, while others detect a highly aromatic flavour; some declare that the nest is composed of the spawn of fish, others of a kind of froth from the sea; a third class affirm that it is a species of gum, collected by the birds from a tree which grows in the neighbourhood; while a fourth maintain that it is the product of a viscous humour, discharged from the bill at the season of reproduction.

M. Poivre, who is declared by Montbeillard to be a very enlightened and accurate traveller, visited a little islet called Petit Joque, situated near Java, and having entered a tolerably deep cavern hollowed in the rocks which bordered the sea, he found its sides hung with small nests, which, on being removed, were ascertained to be those of the esculent swallow. He was then informed by the Malays, the Cochin Chinese, and the Indians of the neighbouring islands, that the salangane made its nest with fish spawn. This, they asserted, it collected as it swept over the surface of the sea, which they afterwards left to coagulate upon the rocks. They also affirmed, that at the time of the construction of the nest, threads of this viscous matter were observed to hang from the bills of this bird. The traveller adds, that some of the fish spawn, which he gathered from the sea and dried, he proved to be identical in character to the substance of the nest of the bird. M. Lamouroux observes, that of the three species of nest, the smallest is the most valuable, and that while the others are found inland, this is only to be discovered upon the sea-coast. This nest is clear and white, and is composed of a plant, called by him gelidia, which he succeeded in reducing to a gelatinous substance by boiling or steeping in water.

The true explanation of the matter appears to be found in a sort of eclecticism of parts of the theories referred to. It is most probable that the sea plants spoken of by Lamouroux are employed in the construction of the nest, which is cemented together by means of the viscous fluid which, we have seen, is believed to exist in other birds of this family.

" In the Cuss, a small island near Sumatra," says Sir T. S. Raffles, " we found two caverns running horizontally into the side of the rock, and in these were a number of these birds'-nests so much prized by the Chinese epicures. They seemed to be composed of fine filaments, cemented together by a transparent viscous matter not unlike what is left by the foam of the sea upon stones alternately covered by the tide, or those gelatinous animal substances found floating on every coast. The nests adhere to each other, and to the sides of the cavern, mostly in horizontal rows, without any break or interruption, and at different depths, from fifty to five hundred feet. The birds that build these nests are small gray swallows with bellies of a dirty white; they were flying about in considerable numbers, but were so small, and their flight was so quick, that they escaped the shot fired at them. The same sort of nests are said to be also found at the foot of the highest mountains in the middle of Java, at a distance from the sea. The value of these nests is chiefly ascertained by the uniform fineness and delicacy of their texture, those that are white and transparent being most esteemed, and fetching often in China their weight in silver.

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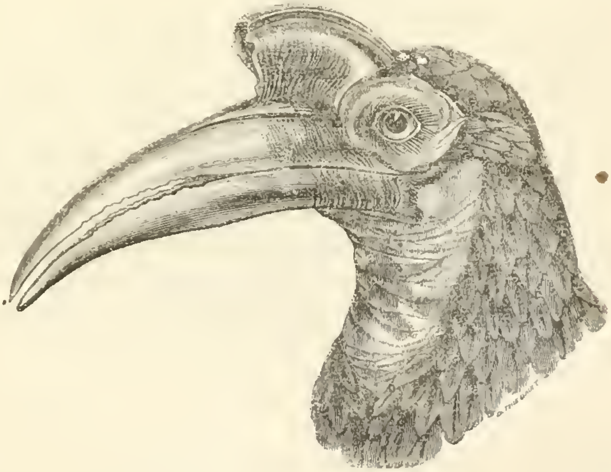
* Hirundo Esculenta.

"The best nests are those obtained in deep damp caves, and such as are taken before the birds have laid their eggs. The coarsest are those obtained after the young have been fledged. The best are white, and the inferior dark-coloured streaked with blood, or intermixed with feathers. Birds' nests are collected twice a year; and if regularly collected, and no unusual injury be offered to the caverns, will produce very equally, the quantity being little if at all improved by the caves being left unmolested for a year or two. Some of the caverns are very difficult of access, and the nests can only be collected by persons accustomed from their youth to the office.—The only preparation which the bird's nest undergoes is that of simple drying, without direct exposure to the sun; after which they are packed in small boxes, usually of a *picul* (about 130 pounds). They are assorted for the Chinese market into three kinds, according to the qualities, distinguished into first, or best, second, and third qualities. Caverns that are regularly managed will afford in 100 parts 53 3-10ths of those of the first quality, 35 parts of those of the second, and 11 7-10th parts of those of the third. The common prices for birds' nests at Canton are, for the first sort, 3,500 Spanish dollars the picul, or £5 18s. 1½*d.* per pound; for the second 2,800 Spanish dollars the picul, and for the third no more than 1,600 Spanish dollars. In the Chinese markets a still nicer classification of the edible nests is often made than on the island. The whole are frequently divided into three great classes, under the commercial appellation of *paskat, chi-kat*, and *tung-tung*, each of which, according to quality, is sub-divided into three inferior orders; and we have consequently prices varying from 1,200 Spanish dollars per picul, to 4,200. These last, therefore, are more valuable than their weight in silver. Of the quantity of birds' nests exported from the Indian islands, although we cannot state the exact amount, we have data for hazarding some probable conjectures respecting it. From Java there are exported about 200 piculs, or 27,000lbs., the greater part of which is of the first quality. The greatest quantity is from the Suluk archipelagos, and consists of 530 piculs. From Macassar there are sent about 30 piculs of the same kind. These data will enable us to offer some conjectures respecting the whole quantity; for the edible swallows' nests being universally and almost equally diffused from Junk, Ceylon, to New Guinea, and the whole produce going to one market, and only by one conveyance, the junks, it is probable that the average quantity taken by each vessel is not less than the sum taken from the ports just mentioned. Taking the quantity sent from Batavia as the estimate, we know that this is conveyed by 5,300 tons of shipping; and, therefore, the whole quantity will be 1,818 piculs, or 242,400 pounds, as the whole quantity of Chinese shipping is 30,000 tons. In the Archipelago, at the prices already quoted, this property is worth 1,263,519 Spanish dollars, or £284,290. The value of this immense property to the country which produces it, rests upon the capricious wants of a single people. From its nature it necessarily follows that it is claimed as the exclusive property of the sovereign, and everywhere forms a valuable branch of his income or of the revenue of the state."

THE TODIES.

The Third Family of this Order consists of the Todies, which, however, appear to have few representatives, and none in Europe. They have peculiar flatness in the shape of the bill, but the breadth greatly varies in other respects. The wings are round, and the two outer toes of the feet are partially united together. We give as a specimen the Green Tody.

The Green Tody is found in some parts of America, and also in the Antilles. It is as elegant as it is beautiful, and the rich green tint of the back, the yellowish white of the breast, relieved by a fine red spot on the throat, and the rose-colour tinge of the thighs, give it a singularly rich appearance. While perched upon a branch, with its feathers ruffled, and its beak in the air, it has an attitude which appears anything but indicating activity or grace; but it is, at the same time, quietly on the alert, and should an insect come within sight, it sweeps after it with unerring certainty. Its nest is formed upon the ground, in which the female deposits four bluish-coloured eggs. The song of the male is very pleasant during the pairing season; at other times it is only a sad cry often repeated.



HEAD OF THE GREEN TODY.

In the island of Jamaica, the tody is a very common bird. On the summit of Bluefields mountain, about 3,000 feet from the level of the sea, and particularly where the deserted provision grounds are overgrown with an almost impenetrable thicket of jointer, or jointwood, Mr. Gosse tells us it is especially abundant. Always conspicuous from its bright grass-green coat, and crimson velvet gorget, it is still a very tame bird, allowing a person to approach very near, and if disturbed, alighting on another twig a few yards distant. That eminent naturalist says, "I have never seen the tody on the ground; but it hops about the twigs of low trees searching for minute insects, occasionally uttering a querulous sibilant note. It is instructive to observe by how various means the wisdom of God has ordained a given end to be attained. The swallow and the tody live on the same prey, insects on the wing; and the short, hollow, and feeble wings of the latter are as effectual to him as the long and powerful pinions are to the swallow. He has no powers to employ in pursuing insects, but he waits till they come within his circumscribed range, and no less certainly secures his meal."

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* Todus Viridis.

THE KINGFISHERS.

THE COMMON KINGFISHER.*

The **Fourth Family** consists of the Kingfishers, to which we have now to advert. These birds are characterised by having a straight, lengthened, and pointed beak, by extreme shortness of the tarsi, and by the short tail and rounded wings. The weight of a bird is an ounce and a half, and its length about seven inches. The colour of the crown of the head is a dark changeable green-blue, with numerous transverse bars of bright azure, the throat is buff, the under parts of a dull orange, while down the middle of the back and on the upper tail coverts is a fine bright azure. The tail is a deep blue, and the legs are orange-red.

In the neighbourhood of all our streams, and especially those which flow through fertile valleys and abound in fish, this splendid but voracious bird may be found, glancing in all directions with the greatest rapidity of flight, its brilliant hues gleaming in the sunbeams. Now poising itself in the air, it anon darts with astonishing velocity at some unwary fish whom it has detected in the depths of the stream, and then perches on a projecting branch or crag by the water side, where it waits with the utmost patience till some fish appears to view, when with one swoop it is borne away to its resting-place and devoured. The death of its captive is effected by grasping it by the tail, and then beating its head on a branch.

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* Alcedo Ispida, Linn.

The kingfisher builds in the banks of the streams which it frequents, sometimes, it is said, taking possession of a rat's hole in which to deposit its eggs. The hole is from two to four feet long, sloping upwards, widening as it extends inwards, and at nearly the extremity of this the nest is deposited. Many mythic stories have been received in reference to the peculiarities of the nest-building of these birds, and also of their own habits, which it is necessary here neither to repeat nor to refute.

Wilson describes the movements of the belted kingfisher of America—which so closely resembles the common kingfisher of Europe that it may serve for an account of either: "Like the lovelorn swains, of whom poets tell us, he delights in murmuring streams and falling waters; not, however, merely that he may soothe his ear, but for a gratification somewhat more substantial. Amidst the roar of the cataract, or over the foam of a torrent, he sits perched upon an overhanging bough, glancing his piercing eye in every direction below for his scaly prey, which, with a sudden, circular plunge, he sweeps from his native element, and swallows in an instant. His voice, which is not unlike the twirling of a watchman's rattle, is naturally loud, harsh, and sudden; but is softened by the sound of the brawling streams and cascades among which he generally rambles." Audubon mentions that this species also visits the salt-water creeks, diving after fish.

HEAD OF SYMA TOROTORO.

The kingfishers have, in general, a body thick in proportion to its length; a large head; the bill long, angular, and thick at the base; the nostrils small, and usually covered with feathers; the tongue fleshy, short, and sharp; the toes four; the outer toe and the next being united; the tail being commonly very short. Some of these birds have a small crest, but more of them are without it. Their stomach is like that of the rapacious birds, and like them, they return at the mouth, in small pellets, the indigestible parts of their food.

The species of this genus are very numerous, and are spread over almost all the world. In Europe there is but one.

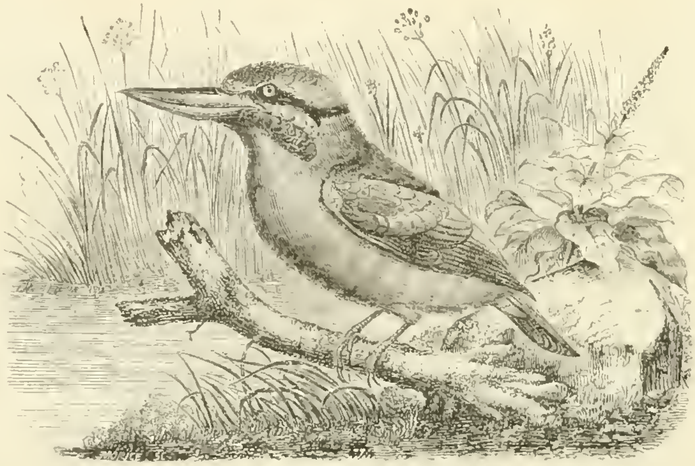
> "The alcyon flew across the stream,
> And the silver brooklet caught the gleam,
> The glittering flush of his dazzling wings
> Was such as the gorgeous rainbow flings."

And certainly this one is as vivid, and as highly ornamental as to colour, as any European bird, though far inferior in beauty to those species of the genus which are found within the tropics. The largest of the species is nearly the size of the crow, but the smallest do not much exceed that of the nightingale.

The Greeks called the common species Alcyon, from Alcyone, the daughter of Æolus, and wife of Ceryx, on whose death, by drowning, it is said she threw herself into the sea, when both were metamorphosed into kingfishers. Many superstitious notions, indeed, prevailed among the ancients as to these birds; and even in the present day, and in various parts, as in Siberia and the South Sea Islands, these birds are regarded with veneration and awe.

The common kingfisher, which is found in Europe or Asia, is six or seven inches long. This species has no crest on the head. The bill is black, but the inside of the mouth is yellow. The tongue and tail are very short.

The flight of this bird is extremely rapid, a fact so much the more remarkable as the wings are very small in proportion to the body, and must, therefore, be furnished with very powerful muscles. Destined to live by the destruction of other beings, its leading habits are patient and persevering ferocity. Perched on a slight branch overhanging a stream, the kingfisher will remain a great length of time waiting the uncertain passage of its prey beneath ; or moving rapidly along the bank from one little elevation to another, it is more actively, but more abstractedly, occupied in the same precarious avocation. The eagerness and impetuosity with which it darts under the water in pursuit of its finny prey are excessive ; and it is remarked, that in order to give a greater impetus to its descent, the kingfisher first mounts a few feet immediately over the spot where it is about to dive ; and that this preliminary ascent is always proportioned to the size of the fish about to be attacked. At another time this bird will skim rapidly along the surface of the water, uttering a sharp cry, and seizing such small fish as may thus come within its power. The kingfisher, unlike some other fish-eating birds, does not swallow the fish whole, but carrying it on land, breaks and tears it with its strong bill. Severe winters are frequently very destructive to these birds, when the frozen surface of the waters shuts up the finny tribes from their attacks.



DACELO ATRICAPILLA.

The kingfisher may often be found near the haunts of man, but it prefers lonely and secluded places. Its only companion is its mate, and both labour assiduously in supporting their young. The place chosen for incubation is a steep, precipitous, or overhanging bank, in which, at some distance above the water, they either form or seize on a burrow extending about three feet deep, at the extremity of which, without making any nest, the female lays her eggs, about five in number, of a beautiful pinky-white. After the young are hatched it is not long before they are surrounded by a circular mound of disgorged fish-bones. It has been supposed that of these the nest is constructed, but such is not the case. The young, almost as soon as fledged, acquire the plumage of their parents, burnished, as it is, with a metallic surface and resplendent with the most brilliant hues.

The *Syma Torotoro* lives on the sea-shore in New Guinea, where it feeds on small fish. Its beak is yellow, its head red, and its back blue. The head of *Dacelo Atricapilla* is black.

THE BEE-EATERS.

MEROPS NUBICUS.

The Bee-eaters,* the LAST FAMILY of the *Fissirostral* tribe, are found in large numbers in the southern and eastern provinces of Europe and the northern districts of Africa, where they may be seen skimming along over the fields in pursuit of bees, butterflies, and grasshoppers. These birds build their nests in clay and sand banks, preferring the borders of rivers, where they sometimes associate together in such numbers that the ground appears like a honeycomb. In Egypt this bird is known by the characteristic designation of the bee's-enemy. In that country it is eaten for food.

The fondness of the *Meropidæ* for bees, and the consequent injury to apiaries from their presence, were alike pointed out in the Georgics of Virgil:

> "Place the rich hives where, deck'd with painted mail,
> Nor lizards lurk, nor birds can yet assail,
> The swift bee-eater, and among the rest
> The swallow, Procné, with her blood-stained breast;
> Devourers fell, with cruel bill they seize,
> While flitting past, the honey-searching bees;
> Then to their greedy nestlings bear away,
> As a sweet morsel, the expected prey."

There is some analogy between the bee-eaters and the swallows; so much so, indeed, that in the neighbourhood of the Cape, where they most abound, the Dutch call them mountain swallows. They are not, however, restricted to Africa, where they are said to guide the Hottentots to the wild honey in the woods, but are found also in Europe and Asia. They are very plentiful in the neighbourhood of Gibraltar, where they make their nests in holes in sand banks. These holes penetrate the bank about three feet, and then take a rectangular direction for about three feet more, where a large cavity is formed for the nests, in which are deposited six or seven eggs rather less than those of the blackbird. They are also exceedingly numerous on the rivers Don, Volga, and Yaik, in southern Russia, as well as in all the adjacent range of Tartary, in Palestine, and Arabia.

The forehead of birds of this species is a yellowish white, merging into bluish-green; the back of the head and upper part of the back is a rich chestnut, passing off into brownish amber; the ear-coverts are black; the wings greenish with an olive tinge, and a large band of brown across the middle; the quill-feathers incline to blue, and end in black; the throat is bright yellow, bounded by a black line; and the whole length of the under surface blue, with reflections of green.

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* Merops Apiaster.

TRIBE II.—DENTIROSTRES.

This term distinguishes those birds whose beak is sloped on the sides of the point, and by a notch or slight tooth on each side of the upper mandible of the bill. In some genera the tooth is so trifling as to be scarcely perceptible, while in others, it is tolerably strong and well-defined ; and whenever it is so, the bird will be found approximating to the fierceness of spirit which characterises the birds of prey. In this family are found the greatest number of insectivorous birds. Still, they almost all eat also berries and tender fruits. Among them we find the singing birds, and the most complicated conformations of the lower larynx. The proportional length of their wings, and the extent of their flight, are as variable as their mode of life.

THE SHRIKES.

Of the *Laniadæ*, or the shrikes constituting the First Family, there is an immense variety. They are spread over the entire globe, and everywhere exhibit similar dispositions, habits, and modes of existence. Of small size, but provided with a strong and crooked beak, of a fierce and courageous disposition, and of a sanguinary appetite, they bear much affinity to the birds of prey. Naturally intrepid, they defend themselves vigorously, and do not hesitate to attack birds much stronger and larger than themselves. The European shrikes can combat with advantage pies, crows, and even kestrils. They attack and pursue these birds with great ferocity, if they dare to approach their nests. It is even sufficient if any of them should pass within reach. The male and female shrikes unite, fly forth, attack them with loud cries, and pursue them with such fury, that they often take to flight without daring to return. Even kites, buzzards, and ravens, will not willingly attack the shrike. They are habitually insectivorous, and also pursue small birds. They will cast themselves on thrushes and other birds, when these are taken in a snare. When they have seized a bird, they open the cranium, devour the brain, deplume the body, and tear it piecemeal.

Another quality attributed to these birds is prudence to foresee and provide for the wants of the future. That they may not fail of the insects which form their subsistence, and which only appear at a particular epoch, some shrikes form magazines, not in the earth, nor the hollows of trees, but in the open air. They stick their abundant prey on thorns, where they may find it again in the hour of need.

Falconers have taken advantage of the character of these birds, and occasionally trained them for the chase. Francis I. of France, it is said, was accustomed to hunt with a tame shrike, which used to speak, and return upon the hand. The Swedish hunters, availing themselves of the habit of the gray shrike of uttering a peculiar sort of cry at the approach of a hawk, make use of it to discover birds of prey which this kind of cry announces.

THE GREAT SHRIKE, OR BUTCHER BIRD.*

The great shrike is spread over all Europe. It remains in woods and wilds during the summer, but on the coming of winter will approach the dwellings of man. It constructs its nest among the branches of lofty trees in solitary forests, and sometimes in thick and thorny hedges. This is composed of hay without, of small fibrous roots and moss interlaced together, and the small branches of neighbouring trees are introduced, and twisted to form its seat and basis. The interior is profusely furnished with feathers, down, and wool. The female lays from four to six eggs of a grayish white, spotted with pale green olive and ash colour. The young are born naked, and never covered with down.

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* Lanius Excubitor.

This bird is much more common on the continent of Europe than in Britain, to which its visits are not frequent. Its name of butcher bird is derived from the practice to which it is accustomed of impaling its prey on sharp thorns or spikes, and leaving them to be devoured at leisure, or tearing them in pieces with peculiar determination and ferocity. The name of *excubitor*, or sentinel, has also been given to this bird by Linnæus, in consequence of the vigilance it manifests in watching against certain birds of prey which it dislikes. The weight of this bird is about two ounces; its length is ten inches, and breadth fourteen. The bill is black and strong, and beset with bristles; the tail is composed of twelve feathers of unequal length, giving to it a wedge-like shape, and the whole of the upper surface is a fine blueish gray.

BARITA.

The parents evince the greatest tenderness for their offspring, tending them carefully during the entire period of infancy, and never quitting them until spring. These birds are seen to fly during the autumn and winter in small flocks, each composed of a single family. These companies never unite together. These families, thus cognisable at a distance, are also distinguished by a piercing cry, answering to the sound of *troûi, troûi*, which may be heard very far off, and which they repeat incessantly when perched on the summit of trees or flying. Their mode of flight is peculiar: it is neither oblique nor horizontal at the same elevation, but continually up and down, by successive springs and undulations. They are always seen perched on the extremity of the most lofty and isolated branches of trees and thickets, a position which their peculiar mode of chase seems to require. For as they fly with difficulty, and always drop perpendicularly on their prey, they thus secure an elevated situation for that purpose, which they could not obtain by attempting to rise from the ground. Dropping thus on their victim, they force it to the earth, where it is instantly seized and torn in pieces. In this manner the great shrike catches small birds, field-mice, and other small quadrupeds. The destruction of these last is an advantage to the farmer, and, accordingly, in many countries, this bird is spared and regarded from this circumstance, and also because it destroys a number of pernicious insects, and never does the slightest injury.

A writer in the "Naturalist" informs us, that he was first led to discover a bird of this species by hearing notes very much like those of a stonechat, yet not quite familiar to him, of which the utterer, to his surprise, was a butcher-bird ; on continuing to listen, these notes were soon exchanged for others of a softer and more melodious character, not however prolonged into a continuous song or strain. This statement is corroborated by Bechstein. "Its cry," he says, "resembles the *guir guir* of the lark : like the nutcracker, it can imitate the different notes, but not the songs of other birds. Nothing is more agreeable than its own warbling, which much resembles the whistling of the gray parrot ; its throat being at the same time expanded like that of the green frog. It is a great pity that it sings only during the pairing season, which is from March to May ; and even then it often spoils the beautiful melody of its song with some harsh and discordant notes. The female also sings."

Mr. Selby describes the singular manner in which this bird devours its prey. One which he saw had just killed a hedge-sparrow, and was hovering with it in its bill over the hedge, apparently occupied in selecting a thorn fit for the required purpose ; and on his afterwards approaching the spot, Mr. Selby found the *accentor* firmly fixed by the tendon of the wing to the selected twig. When confined in a cage the same love of fixing its food before it tears it in pieces is discovered, and for this purpose, the bird usually avails itself of the wires of its prison, among which it intertwines its dead captive. One species, the *lanius collaris*, of Southern Africa, is described as showing these peculiarities in a marked manner. Le Valliant says, that when it sees a locust or a mantis, or small bird, it springs upon it, and immediately carries it off to impale it, which it always does by passing the thorn through the head of its victim. Every animal which it seizes is subjected to the same fate ; and it thus continues through the day its murderous career, apparently instigated rather by the love of mischief than the desire of food. "Its throne of tyranny," as Le Valliant designates it, is usually a dry and elevated branch of a tree, from which it pounces on all intruders, driving off the stronger and more troublesome, and impaling the inexperienced alive ; when hungry, it visits its shambles and helps itself to a savoury meal. The Hottentots assured the traveller that the bird does not prefer fresh food, and therefore leaves its prey on the gibbet till it becomes putrescent ; but beneath the scorching sun of Africa, the process of decomposition sometimes does not take place, from the rapid exhalation of the animal fluids in a warm and arid atmosphere, and consequently, whatever spiry shrub may have been chosen, it is frequently found covered, not with sweet smelling blossoms, but with the dried carcases of singing birds, and the bodies of insects.

Bechstein intimates that in France and Germany this bird is stationary, but in more northern countries it is migratory, passing southward on the approach of winter. According to Mr. Selby, it is only in the winter that this bird arrives in Britain. He says, "By some of the British ornithologists it has been mentioned as arriving in spring and departing in autumn. From this view of its habits I must be permitted to dissent ; all the specimens that have come under my observation having been killed in the months of November, December, and January."

THE GREAT AMERICAN SHRIKE.

The great American shrike is about ten inches in length. The upper part of its head is pale cinereous, the under parts are white or dusky colour, thickly marked with minute transverse curving lines of light brown; the wings are black, tipped with white, and the legs, feet, and claws are black. The appearance of this bird at once shows its characteristics of energy and courage, and these qualities it abundantly displays. The method it adopts of seizing and impaling insects has given rise to many curious conjectures in reference to the reason for which this is done. One gentleman, on visiting a young orchard at Bethlehem, in America, was surprised to find some two or three grasshoppers stuck on the sharp thorny branches, and inquired of his tenant the reason of it; when he was informed that they were secured there by a small bird of prey, called by the Germans neuntedter, ninekiller—which caught and impaled nine grasshoppers a day; and he supposed that, as the bird itself never fed on grasshoppers, that it did this for its own pleasure. This suggestion led to various speculations in the mind of the observer; but the inferences he drew do not appear to be so correct in fact as they were fanciful in themselves. He seems to have overlooked the fact that grasshoppers were the favourite food of the ninekiller, and to have forgotten that such bait would be of little use to a bird who can seize his prey by power of flight.

Mr. Wilson mentions an instance of one of these shrikes, which had the temerity to pursue a snowbird into an open cage, and before any one could arrive to its assistance, it had already strangled and scalped it, though it lost its own liberty by the exploit. "In short," he says, "I am of opinion that his resolution and activity are amply sufficient to enable him to procure these small birds whenever he wants them, which, I believe, is never but when hard pressed by necessity, and a deficiency of his favourite insects; and that the crow or the blue jay may, with the same probability, be supposed to be laying baits for mice and flying squirrels, when they are hoarding their Indian corn, as he for birds, while thus disposing of the exuberance of his favourite food."

The peculiar practice on the part of the shrike, as observed by others, may, however, find its explanation in the fact of its having been endowed with a strong, sharp, and powerful beak, a broad head, and great strength in the muscles of its neck; but its legs, feet, and claws, are not proportionately developed, and are unequal to the task of grasping and tearing its prey, like those of the falcon or owl kind.

THE LOGGERHEAD SHRIKE.[*]

The loggerhead shrike bears considerable resemblance to the great American shrike, but differs in being somewhat smaller in size, and darker in colour. It is principally to be found in the rice plantations of Carolina and Georgia, where it is valued in consequence of its destruction of mice. It may be seen sitting on a fence for hours together beside the stacks of rice, watching for its prey, and as soon as a mouse appears, darting upon it like a hawk. Its note, we are assured, during March, bears a striking resemblance to the clear creaking of a sign-board in wintry weather.

This bird is about nine inches long; the wings are black, tipped with white; the tail is cuneiform, the four middle feathers being entirely black, while the four exterior ones are partly or wholly white.

The head, back ofthe neck, wings, back, and tail of the *Lanius Leuchorhynchus* is black, the lower wing-coverts and body beneath are white. The length of the bird is seven inches. The *Barita,* of which we give an engraving, is exceedingly voracious.

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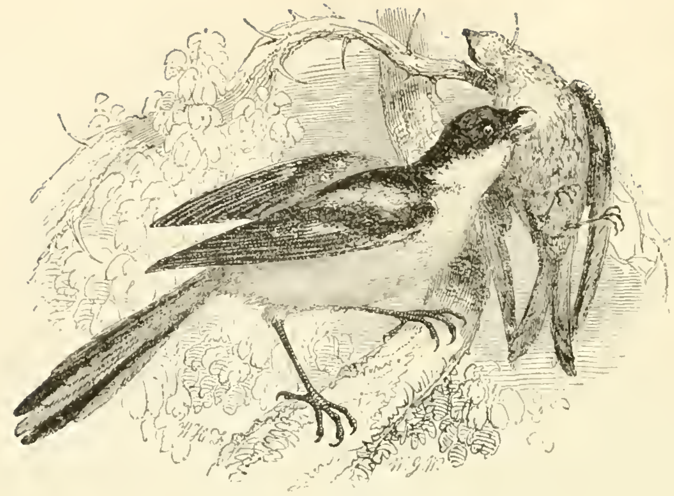
[*] Lanius Caroleninsis.



THE COLLARED SHRIKE.*

The collared shrike is a native of the Cape of Good Hope. It is black and white beneath; the primary quills are white at the base; the tail and middle feathers are black, and the rest white. The length of the bird is twelve inches.

THE RED-BACKED SHRIKE, OR FLUSHER.†

This elegant species is common on the continent of Europe, and in certain parts of Britain. Everywhere it appears to be migratory. In its general habits, and its mode of transfixing its prey upon thorns, it agrees with the great butcher bird, but feeds more exclusively on large insects, particularly on beetles. Small field-mice, birds, nestlings, and lizards, also fall a prey to its rapacity.

Bechstein kept one of these birds in confinement, which refused at first to take any food, though supplied with a great quantity of dead birds and insects. "On the fourth day," says Bechstein, "I set him at liberty in the room, supposing him too weak to hurt the other birds, and thinking that he would become better accustomed to his new food if he were left at liberty. No sooner was he set free than he seized and killed a hedge-sparrow, before I had time to save it. I let him eat it, and then put him back into the cage. From this time, as if his fury was satisfied, he ate all that was given him." As a songster, this bird occupies no mean rank; when at liberty it utters a pleasing and continuous strain, perched on the top of a bush in the common, or on the lower branch of a tree at no great distance from its nest. It is a great imitator of the songs of other birds, which it interweaves with its own strain, and thus mixes together passages of the swallow, the goldfinch, the garden-warbler, the nightingale, redbreast, and lark. In captivity, it imitates the canary or lark, its song being composed of the warblings of the birds the cages of which are hung near it. Bechstein says that it is a very animated bird in captivity, and that if it be wished to clear a room of all the flies, one of these birds set at liberty from its cage will soon effect it. It catches them flying with great skill and agility. "When a thorny branch is given it, it impales all its flies, making, at the same time, the most droll and singular movements. This species easily and quickly learns to whistle airs, but forgets them with the same facility, in order to learn new ones."

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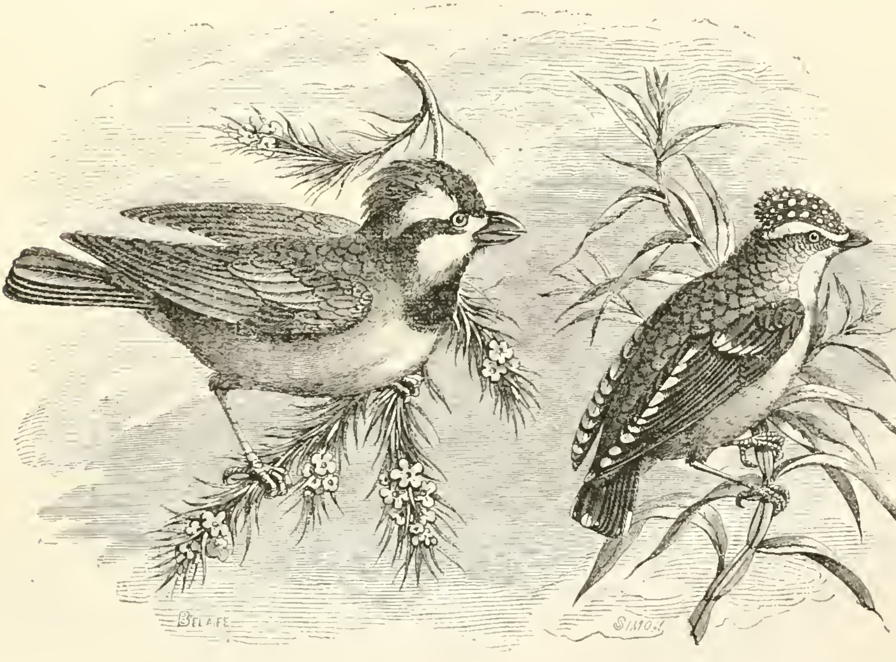
* Lanius Collaris.

† Lanius Collurio.

Among the more remarkable of the foreign genera, there is one termed *Vanga*, distinguished by the size, compressed form, and hooked point of the bill, which is exceedingly strong and powerful. This very singular bird from Australia (*Vanga Destructor*), derives its name from its daring ferocity; it is often known as the New Holland butcher-bird.

Mr. W. C. L. Martin says, "We have seen one of these birds in captivity, when a mouse or small bird has been exhibited in its presence, dart with the utmost eagerness and impatience about its cage, uttering, at the same time, a clamorous chattering, and evincing the utmost state of excitement. If the mouse were placed within its reach, it would seize it behind its head with astonishing rapidity and address, by means of its bill, and strangle it with every indication of exulting triumph. The victim being thus despatched, it would next proceed to fix its body tightly between the wires of its cage, putting the head out at one space, turning it over the wire, and bringing it in at the next space, so as to render it capable of bearing a firm pull, before proceeding with its work of tearing it to pieces.



PARDALOTUS CRISTATUS. FALCUNCULUS.

"No doubt, when at liberty, the *Vanga Destructor* impales its victims upon a sharp spire, or fixes them between the prongs of cleft branches, in order to devour them, as is the case with the European shrike, and it only adopted the mode described because such instruments were not accessible. This, however, was not the only singular trait in the bird alluded to. The voice of the *Vanga Destructor* is full and musical, and its imitative powers of a first-rate description; it copies with great precision a tune, the airs of other animals, the voices of parrots, and the notes of birds. The writer heard the individual alluded to perform a part of one tune in particular, 'Over the water to Charlie,' which it executed with great spirit and melody whenever excited."

The birds, of which the above are engravings, are nearly allied to the shrikes.

THE FLY-CATCHERS.

THE LANIUS SULPHURATUS.

The Second Family of the *Dentirostres* is formed of the Fly-catchers. These birds are generally of a wild and solitary character. Their physiognomy is sombre and distrustful, and not without a certain expression of ferocity. As they are obliged to seize on their prey in mid-air, they are almost always perched on the summit of trees, and rarely alight on the ground. Chasers of flies, their true country must be in the southern regions of the globe. Accordingly, for three or four species known in Europe, a great number are reckoned in the warm climates of Asia and Australia, and still more in America.

In this last continent we find the larger species, which have been denominated tyrants. As nature has increased the growth, and multiplied the insects of the New World, so are they opposed by enemies still more numerous and powerful. It rarely happens, indeed, that any one species or genus is suffered to multiply and extend to the serious prejudice of another. If we see everywhere a great destruction of life, an equivalent reparation is also apparent.

"Without the assistance of the insectivorous races of the feathered kingdom," Buffon says, "vain would be the efforts of man to destroy or banish the clouds of flying insects by which he would be assailed. Innumerable in quantity, and rapid in generation, they would invade our dominions, fill the air, and devastate the earth, did not the birds restore the equilibrium of living nature, by the destruction of the superfluous products. The greatest inconvenience of warm climates is the continual torment caused there by the insect tribes. Man and the quadrupeds cannot defend themselves against them. They attack with their stings; they oppose the progress of cultivation, and devour the useful productions of the earth. They infest with their excrements, or their eggs, all the provisions which are necessary to be preserved. Thus we find that the beneficent birds are not even sufficiently numerous in such climates, where, nevertheless, their species are by far the most multiplied. How happens it, that in our temperate climates, we are more tormented with the flies in the commencement of autumn than in the middle of summer? Why, in the fine days of October, do we see the air filled with myriads of gnats? Because all the insectivorous birds have deserted us. This short lapse of time, during which they have too prematurely abandoned our climate, is sufficient to cause us to be more incommoded with the multitude of insects than at any other season. What then must be the consequence, if, from the moment of their arrival; if, during the entire summer; if, in short, for the whole time of their sojourn among us, we continue to make their destruction a source of amusement?"

THE TYRANT FLY-CATCHER.*

One of the best types of the class of fly-catchers is that presented in the Tyrant fly-catcher. This name has been employed in consequence of the peculiar tenacity the male shows in his affection for his mate and brood, which makes him so jealous of the least indication of intrusion, that his life is for some months a series of embroilments and conflicts, in which, however, he usually comes off victorious. Undaunted by any foe, it is sufficient for him to ascertain the proximity of an intruder, and hawks and eagles find themselves ruthlessly assailed; for, rising to a high elevation above his enemy, he darts down upon him, sometimes fixing himself in an immoveable position upon his back, from which it is most difficult to dislodge him. There is, indeed, only one bird—the purple martin—whose disposition is very similar to his own, who, having somewhat the superiority of wing, can retaliate successfully. All this turbulence, however, only continues till his young are sufficiently old to provide for themselves, when he becomes of as peaceable and reasonable a disposition as other birds.

The Tyrant fly-catcher, or king bird, as he is sometimes called, has a singular mode of flight. The vibrations of his broad wings, as he moves slowly over the fields, resemble those of a hawk when hovering and preparing to settle; and thus he pursues insects, both in the air and among the flowers below. In pasture fields, he frequently takes up his position on the top of some plant near where cattle may be grazing, and there he makes occasional sweeps after passing insects, and particularly after the gad-flies which may be found near horses and cattle, and when he perceives one to his liking, with a shrill noise he pursues and captures his prey. He hovers also over the surface of rivers, darting after insects which frequent such places, and often showing great power of flight. Wilson takes considerable pains to award due honour to the services which this bird confers upon the husbandman—services which have not been appreciated; and he endeavours, both in prose and song, to shield him from the false charges which have been brought against him. "Whatever antipathy may prevail against him," he remarks, "for depredations on the drones, or, if you will, on the bees, I can assure the cultivator that this bird is greatly his friend, in destroying multitudes of insects, whose larvæ prey on the harvests of his fields, particularly his corn, fruit trees, cucumbers, and pumpkins. These noxious insects are the daily food of this bird, and he destroys, upon a very moderate average, some hundreds of them daily. The death of every king bird is therefore an actual loss to the farmer, by multiplying the number of destructive insects, and encouraging the depredations of crows, hawks, and eagles, who avoid, as much as possible, his immediate vicinity. For myself, I must say that the king bird possesses no common share of my regard. I honour this little bird for his extreme affection for his young; for his contempt of danger and unexampled intrepidity; for his meekness of behaviour when there are no calls on his courage—a quality which, even in the human race, is justly considered so noble; but, above all, I honour and esteem this bird for the millions of ruinous vermin which he rids us of, whose depredations, in *one* season, but for the services of this and other friendly birds, would far overbalance all the produce of the bee-hives in fifty."

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* Muscicapa Tyrannus.—Briss.

This bird is eight inches in length, and fourteen in extent of wing. The general colour of the upper parts is dark bluish-gray, inclining to dull slate-black on the head, of which the central feathers along the crown form a rich flame-coloured patch, margined with yellow. The quill-feathers and secondaries are brownish, tipped with dull white; tail brownish-black, tipped with white; the chest grayish-white, becoming pure on the throat and under surface; the bill black; the tarsi dull gray.

Its favourite haunts are the skirts of woods, orchards, gardens, and fields of clover. Perched on a branch, a stake, or a tall weed, all alertness and energy, he glances eagerly around in search of the passing prey. In a moment he is gone; now sweeping close to the verdure of the field; now mounting in graceful undulations, or abruptly turning short; now to the right, now to the left, snapping at the insects as he passes, when, having secured his booty, he returns, either to the same point of observation, or proceeds to another, to look out for another chance. One of his special dainties is a large gad-fly, peculiarly terrifying to horses and cattle; and his destruction of hordes of insects, similarly dreaded, certainly more than counterbalances the occasional injuries he inflicts.

Like the swallow, this bird delights to sweep over the surface of rivers, chasing the insects which dance in the air above, and every now and then dipping and emerging, shaking the spray, as he rises, from his rapidly vibrating wings, and then perching on some near branch to preen his plumage. During the calm and warmth of summer, numbers may be seen thus engaged on the rivers Schuylkill and Delaware, as the evening comes on.

The nest of this bird is built on branches of trees, often of such as grow in the orchard, at no great distance from the ground. The outside consists of twigs and vegetable fibres, having an inner layer of cotton, wool, or tow, of great thickness, and well matted together, the whole being lined with fibrous roots and horsehair. The eggs, of a reddish-white, spotted irregularly with brown, are five or six in number.

THE PEWIT FLY-CATCHER.*

This bird is well known in many portions of the New World. In the earlier part of the year it may be found chiefly in the swampy woods of North and South Carolina, where it prefers the neighbourhood of streams of water. Near such spots these birds will remain on a projecting twig for hours together, calling out pe-wée, pewittitee, pe-wée, darting, ever and anon, after insects, and returning to the same twig. They select some projecting part under a bridge, in a cave, in an open wall, or in the low eaves of a cottage, where to build their nest, the outside of which is composed of mud mixed with moss. The inside is lined with flax and horse-hair. The eggs are five in number, and are white in colour, but having two or three dots of red near the larger end.

Wilson mentions that in a wood with which he was acquainted, "by the side of a small stream, in a cave five or six feet high, formed by the undermining of the water below, and the projection of two large rocks above:—

"There down smooth, glistening rocks the rivulet pours,
  Till in a pool its silent waters sleep,
A dark-browed cliff, o'ertopped with fern and flowers,
  Hangs, grimly lowering, o'er the glassy deep;
Above through every chink the woodbines creep,
  And smooth-barked beeches spread their arms around,
Whose roots cling twisted round the rocky steep:

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* Muscicapa Nunciola.

A more sequestered scene is nowhere found,
For contemplation deep and silent thought profound."

In this cave he knew the pewit to build for several years, but at length its retirement was disturbed by a murderous assault upon the feathered tenants of the solitude, and the spot was no longer occupied by any of the race.

This bird is six inches and a half in length; the upper parts are of a dusky olive, the wings and tail are of a dusky colour, and the lower parts are a pale, delicate yellow. Its arrival among the people of many of the northern districts is regarded as a sure indication of the return of mild weather, and they are admonished at that time to plant various kinds of esculent vegetables without fear of injury accruing to them from the recurrence of frosts.

The Spotted fly-catcher* arrives in England near the end of May, and leaves it towards the end of September. It is found chiefly in the low districts, especially of the south of England, and its numbers diminish as we reach more northern latitudes. It is a quiet bird, sober in its plumage, coming near the dwellings of men, and unostentatiously pursuing its avocations of ridding our gardens, copses, and orchards of innumerable flies. The nest is formed of fibres and moss, and is lined with hair, wool, or feathers, and it is usually so placed as to be sheltered from the weather, this appearing to be regarded as more important than concealment from observation. In fact, the spots in which it sometimes builds are anything but adapted for secresy. The frequent selection by this bird of a beam in an outbuilding has suggested the name by which it is sometimes designated, while the branch of a tree is not an uncommon locality. In one case the head of a garden rake, which was left near a cottage, was rendered available as the foundation for a nest; in another a pair of birds built their nest in a bird-cage, which had been left hanging from a tree in a garden; while, in two instances—one of which

HEAD OF CEPHALOPTERUS.

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* Muscicapa Grisola.

was near a public thoroughfare in London—the ornamental work at the top of a lamp-post was selected, where eggs were laid, and in one case, if not in both instances, the young were matured. This bird often takes up its position on a post or stump, where it may have a good point of view for all the objects which may be around, and there waits till its prey come flying within its sphere of operations; when these appear, it at once pounces on its victim. Often may it be seen occupying such a spot for hours, even though people may be at work around. It is especially active at the time at which the early fruits ripen in the gardens, when it may be seen busily engaged in pursuit of the flies which then throng the trees. The poor bird, however, as is often the case with its feathered companions, instead of receiving the thanks of those whom it thus helps, is often regarded as the cause of the mischief which it labours to prevent, and is regarded as an enemy to the fruit-grower, being designated by him the "cherry-sucker:" It is, accordingly, driven away or destroyed; but in all cases in which the stomachs of these birds have been examined, no indications of fruits have there been found.

THE MUSCICAPA ALBICOLLIS.

The *Cephalopterus Ornatus* inhabits the forests of Brazil. It is about the size of a rook, its plumage is of a blue-black colour, while it can raise the feathers on its head so as to assume the very remarkable shape and appearance indicated in the engraving, and which has been likened to a small but elegant parasol. The entire aspect of this bird is very striking.

The *Lanius Forficatus* is found congregated with others of its race in little groups in the forests in some districts of Southern Africa. Its plumage is black, and it has a crest formed of feathers rising from the front and crown of the head, and bending forward over the beak. The beak, feet, and claws are black. These birds go out in the evening and morning, when a very animated spectacle is presented, as some twenty or thirty of them may be seen flying about in all directions, in pursuit of the bees, on which they obtain a favourite repast. The assemblage of these birds, says Le Vaillant, is regarded by the Hottentots as a conversation between them and evil spirits, and hence they have awarded them the designation of *diabolic*, as indicative of their supposed intercourse.

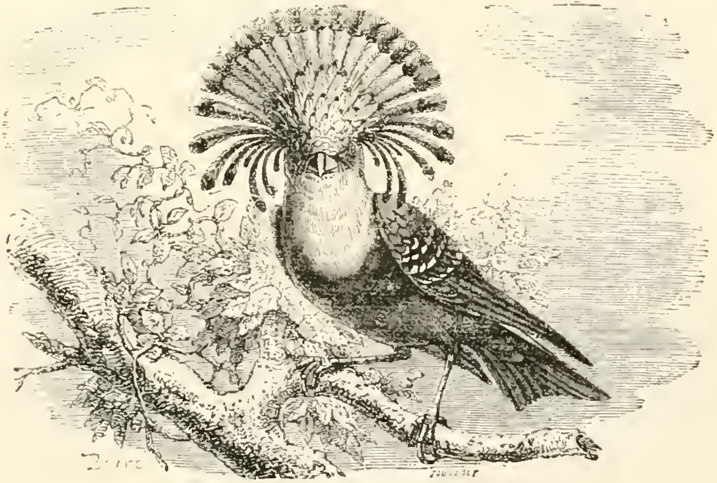
The *Celepyris* of Cuvier is another bird of this family, and is found in Africa and India; it has a remarkably-shaped head. The beak is triangular, convex below, terminating in a bent and indented point, and having bristles at the commissure. The tarsi are short, and the tail somewhat forked. These birds feed principally on caterpillars and larvæ.

The *Lanius Sulphuratus* is a native of America. The beak is pointed, large, and sharp at the edges; the head, and the top of the neck, the back, the wings, and the tail, are of a reddish brown; the throat is white, and also a line above the eye; the head is crowned by an orange mark.

The *Muscicapa Albicollis* is another interesting member of this family. It may be found in the temperate districts of Europe, where it perches on the summit of a tree in the forests and orchards, whence it pursues the insects which form its food. The female builds among bushes, and lays four or five eggs of a greenish white colour, spotted with red. This bird is distinguished by its summer dress, which makes it appear as if it had a white collar round its neck.

This species is closely allied with the pied fly-catcher,* a bird which is rarely found in Britain, except in certain localities. It is very abundant in France, Italy, and along the shores of the Mediterranean, and when it visits Britain it seems to be most plentiful in the vicinity of the Cumberland and Westmoreland lakes. It breeds in the holes of decayed oaks or pollards, laying sometimes as many as eight eggs, and is very noisy if its retreat be approached. The nest is a loose assemblage of roots and grass, with a few leaves, bents, and hair.

The *Todus Regius* is a remarkable bird. A crest of a fine red bay colour, edged with black, crowns the front. The upper parts of the body are of a deep brown, the under parts red, and the throat white; the beak and feet are white.



THE TODUS REGIUS.

The *Muscicapa Coronata* of Latham is rather curious than beautiful. It has a crest upon the top of its head sloping back over the neck. It frequents the cotton plantations, where it pursues the butterflies which come to seek the honey of the flowers; and perched on the extremity of a branch, it waits with quiet vigilance till its prey appears, when it darts upon it with great swiftness of flight. The upper part of the body is brown, the lower part a fine red, as also is the crest upon the head.

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* Muscicapa Luctuosa.—Penn.

THE WHINCHAT.*

The THIRD FAMILY consists of the soft-billed warblers, in which are included many of our favourite songsters. Among these there are some which approach very closely to the fly-catcher in structure and habits, but in all it will be found that their legs are longer, enabling them to hunt their food upon the ground, while they can always pursue them by a short and hasty flight when they rise upon the wing.

The Whinchat, or furzechat, is a migratory bird, appearing in Britain about the middle of April. It is partial to spots where furze is abundant, whence one of the names by which it is known. Its nest is placed upon the ground, but is very artfully concealed among the grass, at the bottom of a bush; the nest being composed of dried grass and stalks, lined with fine dried grass. The female lays six blue eggs.

The shape of the bird is very elegant. The colour of the throat and breast is a delicate fawn, passing into pale buff on the belly and under tail-coverts; the top of the head, neck, back, and smaller wing-coverts are a mixture of pale brown and very dark brown, each feather being dark at the centre, and light at the circumference. In the female the general colours of the plumage are much less pure and distinct.

The Whinchat is well known to many from its peculiar cry of *u-tick*, *u-tick*, which resounds from every bush and hedgerow which it frequents, and which, as it utters, it accompanies with a singular jerk of the tail. It secures most of its food upon the wing; for, taking its station on the topmost branches of a bush, it darts into the air after the flies on which it feeds, and then returns to the same spray again and again, or settling on another after a short flight of thirty or forty yards.

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* Saxicola Rubetra.—Bechst.

The range of the Whinchat in Britain is very extensive, reaching at least, as far as the furzy and broom-clad slopes, which abound on the secondary hills to the south of the Grampians; but it does not appear generally, or in any great number to cross those mountains. It may, however, be found in the eastern parts of the county of Ross, especially along the northern shore of the Cromarty Frith, where the climate is peculiarly genial for the latitude, the lower grounds rich, insects very abundant, and the country accessible across Aberdeen and Moray, without any long flights over the high mountains, or the waters of the ocean.

It is probable that the Whinchat retires, in the latter part of the season, from all its more northerly breeding places; but, that a few pass the winter in Kent and Sussex, even in places where they rarely breed in the summer. A passage from the central parts of Scotland to the south of England is as great a change, both in climate and latitude, as one from the central parts of England to the other side of the channel. And though birds of powerful wing and long and rapid flight can migrate from hemisphere to hemisphere, it is reasonable to suppose that birds of comparatively feeble pinions have their migrations shorter; and that those which go far to the north in summer, do not go so far south in winter.

THE STONECHAT. *

This is a bird of the dry, but not the most barren moors, being found only where there are thick brakes of furze, or other close bushes which do not rise high above the surface, but afford concealment to the nests, and also to the birds themselves, who find there warm and sheltered habitations, and probably food, when the ground is covered, and the sheltering bush nearly buried with snow.

Arrayed in its summer plumage, the stonechat is a very beautiful bird, compact in its form, and rich, though not gaudy, in its hues. The whole length of this bird is five inches and a quarter. The adult male has a black beak; the irides dark brown; the head, neck, and back nearly black; the wing-coverts of the testials white, but partly hid by the other coverts, which are blackish-brown, edged with brown of lighter tint; the upper tail-coverts white; and the tail feathers nearly black. The chin and throat are black; the sides of the neck to the wing white; the breast is a rich chestnut, becoming lighter on the belly; the under surface of the quill-feathers lead gray, edged with dull white; the legs, toes, and claws black. The adult female has the feathers of the upper part blackish-brown, bordered with buff; the quill and tail-feathers brown, edged with buff; the throat blackish, varied with small spots of red and white; the breast dull red, and the wings of smaller extent than in the male.

The soft, but sweet song of this bird is almost the first that is heard on the bushy

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* Saxicola Rubicola.

margins of the extensive heaths. The robin and the wren are, indeed, before it; but when they depart from the cottages, they are in the wild woods; the thrush is in the grove, and the sky-lark is hovering over the fields below; so that the stonechat alone supports the vernal song in those places which it is peculiarly healthy and pleasant to visit at the opening of the spring. It sings, too, till you are almost close to it, and then dropping perpendicularly, glides magically through the bushes, and rises from another part, hovering, and singing again.

THE WHEATEAR.

The wheatear, or fallowchat, as it is sometimes called, is a migrative species, generally making its appearance from the southward about the latter end of March, being abundant in most parts of Europe, and especially of Holland. In this country they frequent downs, commons, and pasture-lands; and also being abundant in warrens, where the bird selects deserted rabbit-burrows, in which to form its nest of dried roots, feathers, rabbits' down, and other light substances, and where it deposits its six pale-blue eggs. On the downs of Sussex these birds are murdered in immense numbers, being caught by the shepherds in snares of horse-hair, fixed on a stick, and placed under two turfs set on edge. Nearly two thousand dozens, it is said, are thus annually taken in one district only. The wheatear is esteemed a delicate morsel by the epicure, and has received the name of the English ortolan.

From that deep sheltered solitude,
Where in some quarry wild and rude
Your feather'd mother rear'd her brood,
Why, pilgrim, did you brave
The upland winds so bleak and keen,
To seek these hills, whose slopes between
Wide stretched in gray expanse is seen
The ocean's toiling wave?

Did instinct bid you linger here,
That broad and restless ocean near,
And wait, till with the waning year
These northern gales arise?
Which, from the tall cliffs' rugged side,
Shall give your soft light plumes to glide
Across the channel's refluent tide
To seek more favouring skies?

Alas! and has not instinct said,
That luxury's toils for you are laid,
And that by groundless fears betrayed,
You ne'er perhaps may know
These regions where the embowering vine
Loves round the luscious fig to twine,
And mild the suns of winter shine,
And flowers perennial blow?

To take you, shepherd-boys prepare
The hollow turf, the wiry snare,
Of these weak terrors well aware,
That bid you vainly dread
The shadows floating o'er the downs,
Or murmuring gale, that round the stones
Of some old beacon, as it moans,
Scarce moves the thistle's head.

And if a cloud obscure the sun,
With faint and fluttering heart you run,
And to the pitfall you should shun,
Resort in trembling haste;
While on that dewy cloud so high,
The lark, sweet minstrel of the sky,
Sings in the morning's beamy eye,
And bathes his spotted breast.

Ah! simple bird, resembling you
Are those, that with distorted view,
Through life some selfish end pursue
With low inglorious aim;
They sink in blank oblivious night,
While minds superior dare the light,
And high on honour's glorious height
Aspire to endless fame.*

This bird feeds chiefly upon worms, larvæ, and insects, some of which are taken on the wing. It begins its nest in the southern parts of Britain, about the middle of April, sometimes availing itself of a recess beneath some crag of rock, where the arm cannot follow them. Mr. Knapp mentions that one bird had made her nest deep in the crevice of a stone quarry, so carefully hidden from view by projecting fragments, that it was not observed till part of the stone had been removed. Another hen-bird had descended among the interstices of some rather large loose stones, just as a mouse would have done, and then proceeded laterally to a hollow space in a bank, against which the stones were laid; and so deep had she penetrated, that many of the stones had to be removed before the treasure could be discovered.

As soon as the breeding season has terminated, the annual moulting takes place, when the plumage of both old and young birds is very similar. At other times the adult male has the top of the head and the back of a fine gray colour, the wing-coverts and quill-feathers almost black, the lower part of the back and two-thirds of the tail white, the wings black, and the chest a delicate fawn colour, fading into white. The length of the bird is six inches and a half, and it weighs about six drams and a half.

Sweet informs us that he watched a pair of these birds near the gravel pit in Hyde-park. They were quite lively, and were flying about after the insects as briskly as if it were summer, although it was the middle of November. They appeared not to be at all shy, as if they had been there some time, and allowed the naturalist to come within three yards of them, so that they might have been easily caught in a trap. The song of this bird is not very often to be heard when wild, partly, perhaps, because its voice is low and soft. When confined the wheatears are almost continually singing, by night as well as by day, and they have a very pleasant, variable, and agreeable song, different from all other birds; their winter song is, however, the best and the most varied. Sweet says that a pair which he had began to sing a few days after they were captured, and continued in full song up to the time at which he wrote. When in a large cage or aviary, where there is plenty of room, it is very amusing to catch them at play, flying up and down, and spreading open their large wings in a curious manner, dancing and singing all the while.

THE REDBREAST.†

The redbreast is so familiarly known, both in itself and in its habits, as to require but little of minute description from us. Its beautiful colouring, its sprightly form, its sagacious and intelligent look, its appearance when other birds are rare, and its confiding disposition, have made it an universal favourite among all classes and of every age.

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* Mrs. C. Smith.

† Erythaca Rubecula.—Swains.

This bird is an early builder, usually selecting a hollow in a grassy or moss-covered bank in which to build its nest. Turner, an English naturalist of the sixteenth century, gives a quaint and interesting account of what he supposed to be the habits of this bird. "The robinet," he says, "which hath a red breast both in summer and in winter, nestleth as far as possible from towns and cities in the thickest copses and orchards, after this manner. When she hath found many oak leaves, she constructeth a nest, and when built, covereth it in with arch work, leaving only one way for entrance, for which purpose she buildeth with leaves a long porch before the door-way, the which, when going out to feed, she covereth up with leaves. These things," he adds, as if somewhat doubtful of their strict accuracy, "which I now write, I observed when a boy, though I do not deny that she may indificate otherwise, and if any one curious in such matters hath observed her build differently, it will be a gratification to me to learn the same; I have related candidly that which I have seen."*

This bird seems to have little instinctive fear of man; it is the labourer and gardener's companion; it attends him at his work; hops around his feet, and almost under his spade, and collects the insects he turns up with much confidence. It even accompanies him at his meals, and picks up every crumb that falls, with apparent assurance of security. In the winter, it enters our houses, and becomes, as it were, one of the family. Addison, in the "Spectator," No. 85, attributes much of the respect paid to it to the old ballad of "The Children in the Wood;" and hence Isaac Walton denominates it, "The Honest Robin, that loves mankind both dead and alive." Collins also introduces it in the dirge in Cymbeline:—

The redbreast oft, in evening hours,
Shall kindly lend his little aid,
With hoary moss and gathered flowers,
To deck the ground where thou art laid.

Indeed most of our poets have sung its praises, but none more pleasingly than one of humble rank, the faithful old servant, John Jones.

Sweet social bird, with breast of red,
How prone's my heart to favour thee!
Thy look oblique, thy prying head,
Thy gentle affability:

Thy cheerful song in winter's cold,
And when no other lay is heard,
Thy visits paid to young and old,
Where fear appals each other bird.

Thy friendly heart, thy nature mild,
Thy meekness and docility,
Creep to the love of man and child,
And win thine own felicity.

The gleanings of the sumptuous board
Conveyed by some indulgent fair,
Are in a nook of safety stored,
And not dispensed till thou art there.

In stately hall and rustic dome,
The gaily robed and homely poor
Will watch the hour when thou shalt come,
And bid thee welcome to the door.

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* Avium Histor.—Princip.

The herdsman on the upland hill,
The ploughman in the hamlet near,
Are prone thy little paunch to fill,
And pleased thy little psalm to hear.

The woodman seated on a log
His meal divides atween the three,
And now himself, and now his dog,
And now he casts a crumb to thee.

For thee a feast the school-boy strews
At noon-tide, when the form's forsook;
A worm to thee the delver throws,
And angler when he baits the hook.

At tents where tawney gipsies dwell,
In woods where hunters chase the hind,
And at the hermit's lonely cell,
Dost thou some crumbs of comfort find.

Nor are thy little wants forgot,
In beggar's hut or crispin's stall;
The miser only feeds thee not,
Who suffers ne'er a crumb to fall.

The youth who strays, with dark design,
To make each well-stored nest a prey,
If dusky hues denote them thine
Will draw his pilfering hand away.

The finch a spangled robe may wear,
The nightingale delightful sing,
The lark ascend most high in air,
The swallow fly most swift on wing.

The peacock's plumes in pride may swell,
The parrot prate eternally;
But yet no bird man loves so well
As thee with thy simplicity.

It has been truly said of this bird:—

"High is his perch, but humble is his home,
And well concealed; sometimes within the sound
Of heartsome mill-clack, where the spacious door,
White with dust, tells him plenty reigns around:
Close at the root of brier-bush that o'erhangs
The narrow stream, with shealings bedded white,
He fixes his abode, and lives at will.
Oft near some single cottage he prefers
To rear his little home; there, pert and spruce,
He shares the refuse of the good wife's churn;
Nor seldom does he neighbour the low roof
Where tiny elves are taught."

The robin indeed often selects strange localities in which to have its nest. One pair chose a small cottage, in which potatoes were kept, and which closely adjoined a blacksmith's shop, and despite the noise of the forge and the frequent visits of the owners, they built their nest in a child's covered cart which was hung against the wall over the fire-place. Another pair took possession of a small saw-pit, and were altogether unaffected by the sawing of timber which was carried on during the time of the sitting of the female. Other spots equally unexpected have thus been chosen, and though these birds may be particular in requiring seclusion at first, yet, if the eggs have been laid, it appears to require no small demand upon their fears before they are made to remove.

Dr. Jenner has thus addressed the robin :—

Come, sweetest of the feather'd throng!
And soothe me with thy plaintive song:
Come to my cot, devoid of fear,
No danger shall await thee here:
No prowling cat, with whiskered face.
Approaches this sequestered place:
No schoolboy with his willow-bow
Shall aim at thee a murderous blow:
No wily lim'd twig ere molest
Thy olive wing or crimson breast:
Thy cup, sweet bird, I'll daily fill
At yonder cressy, bubbling rill;
Thy board shall plenteously be spread
With crumblets of the nicest bread;
And when rude winter comes and shows
His icicles and shivering snows,
Hop o'er my cheering hearth and be
One of my peaceful family:
Then soothe me with thy plaintive song,
Thou sweetest of the feathered throng!

The song of the robin attracts many, not only for its sweetness, but also for the indication which it affords of the state of the atmosphere. When spring comes, he warbles for a short time in so singular a strain as even to startle those who may be accustomed to the ordinary notes of birds. Though the weather in summer may be unsettled and rainy, he may sometimes be observed on the roof of a house, or on some topmost twig in the evening, pouring forth his mellow notes with cheerful and hearty strain. Thus he is regarded as a kind of barometer, for he foretels succeeding fine days. If, on the other hand, the atmosphere be dry and warm, and he chirps or broods in a nest in melancholy mood, many will augur an unfavourable change in the weather. In autumn his pipings are heard, with their grave but sweet tones; yet, he has been singing all through the spring and summer. The reason of this is because, in these two seasons, his voice is drowned and lost in the general chorus, while in autumn it is easily distinguishable. The robin is one of the latest among birds to retire to roost, and one of the first that may be found moving in the morning.

During the summer the robin retires to the woods and thickets. He then loses his "scarlet stomacher," and does not recover it till the autumn. This accounts for the strange assertion of Pliny, who says, that it is only a redbreast in winter, but becomes a fire-tail in summer. During the time of incubation, he drives all birds of his own species from his little settlement, and furiously attacks every intruder that ventures on his beat. Notwithstanding his quarrelsome and selfish disposition, his seeming humbleness and necessities win our pity in seasons of severity.

"The redbreast, sacred to the household gods,
Wisely regardful of the embroiling sky,
In joyless fields and thorny thickets leaves
His shivering mates, and pays to trusty man
His annual visit. Half-afraid, he first
Against the window beats; then brisk alights
On the warm hearth; then hopping o'er the floor
Eyes all the family askance,
And pecks, and starts, and wonders where he is;
Till more familiar grown, the table crumbs
Attract his slender feet."*

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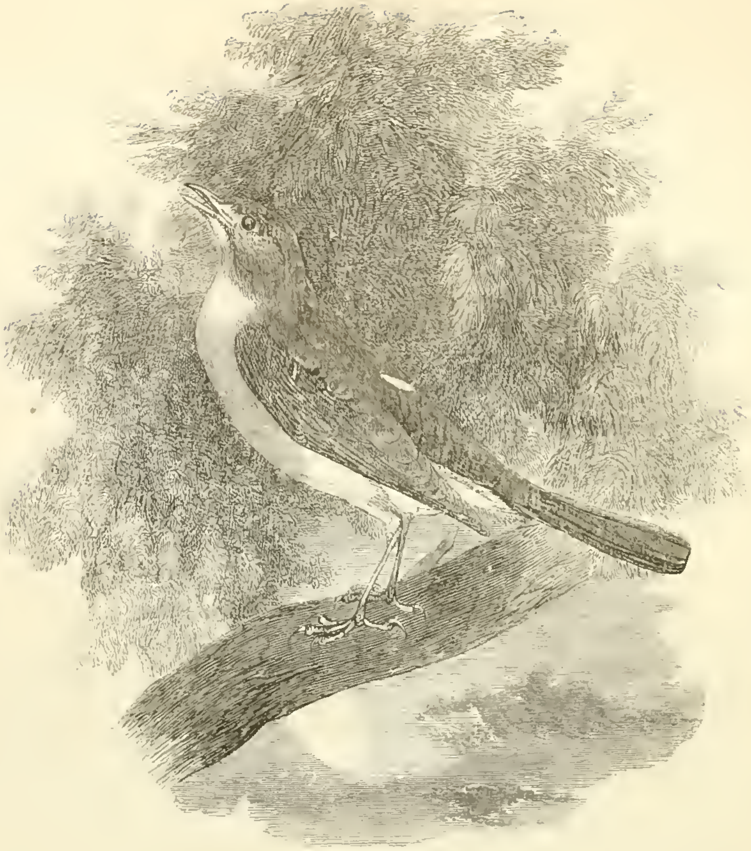
* Thomson.



THE NIGHTINGALE.*

The Nightingale is universally regarded as the most celebrated of all the British warblers, possessing beyond any other those requisites of volume, quality, and execution of voice, which combine to make a songster. Emphatic has been the praise which many have awarded the songs of this bird, but few have been more expressive or more natural than that of Isaac Walton. "The nightingale," he says, "another of my airy creatures, breathes such sweet, loud music out of her little instrumental throat, that it might make mankind to think that miracles had not ceased. He that at midnight, when the very labourer sleeps securely, should hear, as I have very often, the clear airs, the sweet descants, the natural rising and falling, the doubling and redoubling of her voice, might well be lifted above earth, and say, 'Lord, what music hast thou provided for the saints in heaven, when thou affordest bad men such music on earth!'"

The nightingale usually makes its appearance in England about the middle of April, and leaves in August. These birds prefer localities where there are woods having thick undergrowth, and where low coppices and plantations abound. Their nests are constructed with singular artifice, being so carefully concealed from view that they are very difficult to discover. They are almost always placed upon the ground, advantage being taken of any accidental depression of the ground which may exist. The outside is composed of dried leaves or grass, or of the skeleton leaves which may be found in the banks or thick bottoms of hedges, while the inside is lined towards the bottom with fine fibrous roots or hair. The eggs are four or five in number, of an olive brown colour; the young are hatched in June. Like those of other birds, they are exposed to perils:—

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* Curruca Luscinia.

"The nightingale,
When returning with her loaded bill,
The astonished mother finds a vacant nest,
By the hard hands of unrelenting clowns
Robb'd; to the ground the vain provision falls!
Her pinions ruffle, and low drooping, scarce
Can bear the mourner to the poplar shade;
Where, all abandoned to despair, she sings
Her sorrows through the night; and in the bough
Sole sitting, still at every dying fall
Takes up again her lamentable strain
Of winding woe; till, wide around, the woods
Sigh to her song, and with her wail resound."

The principal food of the nightingale is the caterpillars of moths and the larvæ of beetles, some of which feed only at night; these are especially numerous in damp weather, when vegetation is succulent, and the nightingale soon finds sufficient food to satisfy his wants. Organised for the utterance of certain notes and modulations, he has, at the same time, an instinctive impulse to sing, and, also, the faculties of imitation and memory. The strain itself has to be learned, but this is acquired from his parents, and when the proper season arrives, joyously poured forth. It has been remarked that young male nightingales begin to warble before their tails are quite grown; but if thus captured, they must be put under the instruction of a nightingale which is a good singer, or they will only be stammerers.

A change, too, comes o'er the spirit of his song in June, arising not from the loss of voice, but from a change of object and hence of note. His song ceases when his mate has hatched her brood; vigilance and anxiety then succeed the harmonies which have been heard before, and his "croak" is the warning of suspicion or danger to the mother bird and their infant brood.

The poets have often made this bird their theme. It is thus celebrated by one of the Elizabethan poets, Drummond of Hawthornden:—

Sweet bird! that sing'st away the early hours
Of winters past, or coming, void of care,
Well pleased with delights, which present are,—
Fair seasons, budding sprays, sweet smelling flowers;
To rocks, to springs, to rills, from leafy bowers;
Thou thy Creator's goodness dost declare,
And what dear gifts on thee he did not spare,
A stain to human sense in sin that lowers:
What soul can be so sick, which by thy songs
(Altered in sweetness,) sweetly is not driven,
Quite to forget earth's turmoils, spites, and wrongs,
And lift a reverend eye and thought to heaven?
Sweet artless songster, thou my mind dost raise
To airs of spheres, yes, and to angels' lays.

Hurdis, in his simple and beautiful verse, thus addresses the nightingale:–

———Now I steal along a woody lane,
To hear thy song so various, gentle bird,
Sweet queen of night, transporting Philomel.
I name thee not to give my feeble line
A grace else wanted, for I love thy song,
And often have I stood to hear it sung,

When the clear moon, with Cytherean smile
Emerging from an eastern cloud, has shot
A look of pure benevolence and joy
Into the heart of night. Yes, I have stood
And marked thy varied note, and frequent pause,
Thy brisk and melancholy mood, with soul
Sincerely pleased. And O, methought, no note
Can equal thine, sweet bird, of all that sing
How easily the chief! Yet have I heard
What pleases me still more—the human voice
In serious sweetness flowing from the heart
Of unaffected woman. I could hark
Till the round world dissolved to the pure strain
Love teaches, gentle modesty inspires.

Coleridge has told us, in glowing language, his estimate of this favoured and favourite songster :—

And, hark! the nightingale begins its song,
"Most musical, most melancholy" bird.
A melancholy bird? oh! idle thought!
In nature there is nothing melancholy.
——'Tis the merry nightingale
That crowds, and hurries, and precipitates
With fast, thick warble, his delicious notes
As he were fearful that an April night
Would be too short for him to utter forth
His love-chant, and disburden his full soul
Of all its music!

And I know a grove
Of large extent, hard by a castle huge,
Which the great lord inhabits not; and so
This grove is wild with tangling underwood,
And the trim walks are broken up, and grass,
Thin grass and kingcups, grow within the paths;
But never, elsewhere, in one place I knew
So many nightingales; and far and near,
In wood and thicket, over the wide grove,
They answer and provoke each other's song
With skirmishes and capricious passagings,
And murmurs musical and swift, jug, jug,
And one low piping sound more sweet than all—
Stirring the air with such an harmony,
That should you close your eyes, you might almost
Forget it was not day! On moonlit bushes,
Whose dewy leaflets are but half disclosed,
You may perchance behold them on the twigs,
Their bright, bright eyes, their eyes both bright and full,
Glistening, while many a glow-worm in the shade
Lights up her love-torch.

And oft a moment's space,
What time the moon was lost behind a cloud,
Hath heard a pause of silence; till the moon
Emerging, hath awaken'd earth and sky
With one sensation, and these wakeful birds
Have all burst forth in choral minstrelsy,
As if some sudden gale had swept at once
A hundred airy harps!

It is strange that this lively bird should ever be thought melancholy; no bird sings when it is sad; its solitary habits and its love of the night have probably given rise to this opinion. The different views taken of its song by poets may be summed up in the words of the Abbé la Pluche:—"The nightingale passes from grave to gay; from a simple song to a warble the most varied; and from the softest trillings and swells to languishing and lamentable sighs, which he as quickly abandons, to return to his natural sprightliness."

A modern traveller describes the gratification which he once enjoyed in Andalusia while hearing some of these songsters. He had wandered out to take a draught of fresh air, perfumed as it was by the thousand aromatic plants that grew wild on the mountains. On this occasion there were two birds, perched upon neighbouring trees, singing alternately one against the other, the one waiting some little time after the other had concluded. Their prevailing note, was, as usual, that sweet and swelling strain which, beginning in a low whistle, passes in rapid quavers to well-articulated modulations, and grows fuller and fuller for a few seconds, until it reaches the pitch of force and melody, thence declining to a close by equally happy and harmonious gradations.

According to Bechstein, "The first good quality of a nightingale is undoubtedly its fine voice." He then informs us, that this bird expresses his different emotions by suitable cries and particular intonations. The most unmeaning cry when he is alone appears to be the simple whistle, "fitt;" but if the syllable "err" be added, it is then the call of the male to the female. The sign of displeasure, or fear, is "fitt," repeated rapidly and loudly before adding the terminating "err;" while that of satisfaction, pleasure, and complacency is a deep "tack," which may be imitated by smacking the tongue. In anger, jealousy, rivalry, or any extraordinary event, he utters hoarse disagreeable sounds, somewhat like a jay, or a cat. Lastly, in the season of pairing, during their playful gambles, a gentle subdued warbling is all that is heard.

"Nature," he continues, "has granted these tones to both sexes; but the male is endowed with so very striking a musical talent, that, in this respect, he surpasses all birds, and has acquired the name of the king of songsters. The strength of his vocal organ is, indeed, wonderful; and it has been found that the muscles of his larynx are (proportionally) much more powerful than those of any other bird. But it is less the strength than the compass, flexibility, prodigious variety, and harmony of his voice, which make it so admired by all lovers of the beautiful. Sometimes dwelling for minutes on a strain composed of only two or three melancholy tones, he begins in an under voice, and swelling it gradually by the most superb *crescendo* to the highest point of strength, he ends it by a dying cadence; or, it consists of a rapid succession of more brilliant sounds, terminated, like many other strains of his song, by some detached ascending notes. Twenty-four different strains or couplets may be reckoned in the song of a fine nightingale, without including its delicate little variations; for among these, as among other musicians, there are some great performers and many middling ones. This song is so articulate that it may be very well written.

"The nightingales of all countries, the south as well as the north, appear to sing in the same manner; but there is, as has been observed, so great a difference that we cannot help acknowledging that one has a great superiority over another. On points of beauty, however, where the senses are the judges, each has his own peculiar taste. If one nightingale has the talent of dwelling agreeably on his notes, another utters his with peculiar brilliancy; a third lengthens out his strain in a peculiar manner; and a fourth excels in the silveriness of his voice. All four may excel in their style, and each will find his admirer; and it is very difficult to decide which merits the palm of victory. There, are, however, individuals so very superior as to unite all the beauties of power and melody; these are generally birds which, having been hatched with the necessary qualifications, in a district well supplied with nightingales, appropriate whatever is most striking in the song of each. As the return of the males in spring always precedes that of the females by seven or eight days, they sing before and after midnight, in order to attract their companions on their journey during the fine nights. If their aims succeed, they then keep silence during the night, and salute the dawn with their first accents, which are continued through the day. Some persist, in their first season, in singing before and after midnight; whence they have obtained the name of nocturnal nightingales. After repeated experiments for many successive years, I think I am authorised in affirming that the nocturnal and diurnal nightingales form distinct varieties which propagate regularly; for if a young bird be taken out of the nest of a night-singer, he will in turn sing at the same hours as his father, not the first year, but certainly in the following; while, on the other hand, the young of a day-nightingale will never sing in the night, even when it is surrounded by nocturnal nightingales. I have also remarked that the night-singers prefer mountainous countries, and even mountains themselves, whilst the others prefer plains, valleys, and the neighbourhood of water. I will also venture to affirm that all the night-singers found in the plains have strayed from the mountains. Thus, in my neighbourhood (Walterhausen, Saxony), enclosed in the first chains of the mountains of Thuringia, we hear only night-singers: on the plains of Gotha they know only the day-nightingale."

This bird, according to the same authority, "is capable, after some time, of forming attachments. When once he has made acquaintance with the person who takes care of him, he distinguishes his step before seeing him; he welcomes him by a cry of joy, and, during the moulting season, is seen making vain efforts to sing, and supplying by the gaiety of his movements, and the expression of his looks, the demonstrations of joy which his throat refuses to utter. When he loses his benefactor, he sometimes pines to death; if he survive, it is long before he is accustomed to another. His attachments are long, because they are not hasty; as is the case with all wild and timid dispositions."

This bird is said never to have ventured north of the Tweed: the poet Leyden therefore feelingly laments—

"Sweet bird! how long shall Teviot's maids deplore
Thy song, unheard along her woodland shore!"

Yet Douglas and Dunbar, though probably using only a poetical license, allude to its song, in their descriptive poems. Sir J. Sinclair endeavoured to introduce this delightful songster into the groves of Scotland. The eggs of robins, *Sylvia Rubecula*, were exchanged for those of the nightingales, and hatched and brought up by their foster-parents. The young nightingales migrated at the usual time, September, but never returned to the place of their birth.

THE REED WARBLER.*

The reed warbler, which has also been called the reed wren, and the night warbler, is often confounded with the sedge bird, to which it indeed has considerable resemblance. It is therefore worthy of special remark that the reed warbler may be distinguished by its having no light streak over the eye, which in the sedge bird is broad and conspicuous, and the whole of the upper parts being of one plain olive-brown colour. The reed warbler is rather more than five inches in height, the sides being a little inclined to rufous-brown; the tail is cuneiform.

This bird visits England in April, and leaves in September. Its song may frequently be heard during the day, and occasionally also at night, and Mr. Selby states that its song is varied and pleasing, but it is delivered in a hurried manner, like that of the sedge warbler. One naturalist kept one which sang during the winter, its voice being loud and variable, consisting of a great number of notes, and from its diversity resembling the song of several different birds.

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* Sylvia Arundinacea.—Penn.

A favourite resort of these birds is the extensive fresh waters called the Broads, near Yarmouth, with their numerous islands, reeds, and aquatic herbage. They are abundant in Holland, and they frequent Germany and France. In order to observe the habits of this bird, the locality stretching between Shepherd's Bush and Hammersmith has been recommended. The ground there has been dug for brick earth, and water having stagnated in the excavations has produced an abundant growth of reeds, which are preserved by the brickmakers as a crop. The warbler visits these beds when the reeds have grown to a considerable height, and as it departs before they are cut, enjoys comparative immunity from all danger.

The voice of the bird may be heard in these neighbourhoods, as it warbles forth its song. Towards autumn it may sometimes be seen during its visits to gardens and cultivated grounds in pursuit of insects. It has great partiality for the common house-fly, and may be found beside the manure heaps where those flies breed.

One naturalist states that he had a nest built by this bird among the branches of lucerne. It was about three inches in depth and width, and almost entirely composed of hay, the brim being of thicker stems of dry grass. A few hairs were wound round the interior, which was smoothly finished, and in some parts there were small tufts of willow down interwoven with elm blossoms. The bird usually perches on a leaf or a leaning stalk, though, when it desires to do so, it can cling with security to an upright reed. If the stalk or leaf be very flexible, it sits upon it with its wings not quite closed, but recovered, so as to have a little hold on the air, so that if a gust of wind should unexpectedly imperil its hold, it can easily spring or fly to a more secure spot.

THE THRUSH.*

The Fourth Family comprehends the Merulidæ, or thrushes, and includes, besides what may be designated the true thrushes, the orioles, the ouzels, and many others. In this family are some of our best song-birds, and it has representatives in every quarter of the globe. These birds are more or less terrestrial in their habits, and for this purpose are provided with strong tarsi, by means of which they can pursue their food among fields or hedges.

Our rural poet Clare, with exquisite discrimination and power of description, thus speaks of the nest of this bird :—

Within a thick and spreading hawthorn bush
That overhung a molehill large and round,
I heard, from morn to morn, a merry thrush
Sing hymns to sunrise, while I drank the sound
With joy : and often an intruding guest,
I watched her secret toils, from day to day,
How true she warped the moss to form her nest,
And modelled it within with wood and clay.
And by-and-by, like heath-bells gilt with dew,
There lay her shining eggs, as bright as flowers,
Ink-spotted-over shells of green and blue,
And there I witnessed, in the summer hours,
A brood of nature's minstrels chirp and fly,
Glad as the sunshine and the laughing sky.

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* Turdus Musicus.

The song of the thrush is unquestionably the finest of any of our permanent wood songs, and superior in power and clearness, though not in variety, to that of any of the warblers. But the very abundance of it, perhaps, makes it less prized than it should be. The nightingale, heard in the depth of groves, and during the soft and balmy stillness of a summer's night, may have in it more of romance; but there is a bold, natural, and free feeling of rustic vigour, enjoyment, and endurance about the thrush which gives it a more true and hearty interest in all parts of the country, than can be possessed by any mere bird of passage, whatever may be its charms while it stays. The thrush is especially one of the birds of plenty: its blithe and varied song is never heard amid desolation; and if you hear a thrush, you have not far to go before you come to a human dwelling.

Mrs. Charlotte Smith has thus addressed this bird :—

Oh! herald of the spring! while yet
No hare-bell scents the woodland land,
Nor starwort fair, nor violet.
Braves the bleak gust, and driving rain;
'Tis thine, as through the copses rude
Some pensive wanderer sighs along,
To soothe him with thy cheerful song,
And tell of hope and fortitude.

For thee, then, may the hawthorn bush,
The elder, and the spindle tree,
With all their various berries blush,
And the blue sloe abound for thee!
For thee the coral holly glow,
Its armed and glossy leaves among;
And many a branched oak be hung
With the pellucid mistletoe!

Still may thy nest, with lichen lined,
Be hidden from the invading jay;
Nor truant boy its covert find,
To bear thy callow young away,
So thou, precursor still of good,
Oh! herald of approaching spring!
Shalt to the pensive wanderer sing,
Thy song of hope and fortitude!

THE WOOD-THRUSH.*

The wood-thrush, or wood-robin of America, may be found in the entire continent, from Hudson's Bay to the peninsula of Florida, and it is regarded with the deep interest which the nightingale or song-thrush of England receives. Wherever the wood-thrush may be, he soon gives delightful indications of his presence; for with the return of the morning he mounts the topmost branch of some tall tree, and though his song is composed of but few notes, they are so clear, distinct, and mellow, that it is impossible to hear them without delight, as they gradually rise in strength and then fall away in gentle cadence, becoming at length so low as to be scarcely audible. The prelude, or symphony, to its song resembles, it is said, "the double-tonguing of a German flute, and sometimes the tinkling of a small bell; the whole song consists of five or six parts, the last note of each of which is in such a tone as to leave the conclusion evidently suspended; the finale is finely managed, and with such charming effect as to soothe and tranquillise the mind, and to seem sweeter and mellower at each successive repetition. Rival songsters, of the same species, challenge each other from different parts of the wood, seeming to vie for softer notes and more exquisite responses." During the noontide heat, they are comparatively silent; but in the morning and evening their sweet song is heard, which continues long after sunset; and even in dark and gloomy weather, when other birds are silent, the clear notes of the wood-thrush thrill through the woods, so that it has been remarked, that the sadder the day the sweeter is its song.

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* Turdus Mustelinus.—Gmelin.

The wood-thrush is of a shy and retiring disposition, and finds its favourite haunts in low, thick-shaded hollows, through which a rill may wind its course, and where there may be alder bushes, mantled with wild vines. Here it selects its retreat, and in the branches of a laurel or alder it builds its nest, composed first of withered beech-leaves of the preceding year, above which are layers of knotty stalks of withered grass, mixed with mud, and smoothly plastered, and then a slight lining of fine, black, fibrous roots of plants. It has been well remarked, that thus the wood-thrush, with the modesty of true merit, charms you with his song, but is content, and even solicitous, to be himself concealed. He delights to trace the irregular windings of the brook, where, by the luxuriance of foliage, the sun is completely shut out, or only plays in often interrupted beams on the glittering surface of the water. He is also fond of a particular species of lichen which grows in such situations, and which, towards the autumn, have been uniformly found in the stomach: berries, however, of various kinds, are his principal food, as well as beetles and caterpillars.

The wood-thrush performs its migrations during the day, when it glides swiftly through the woods without appearing in the open country; and on alighting upon a branch it gives its tail a few jerks, uttering at each motion a low chuckling note, peculiar to itself; it then stands still for a while. It walks along the branches with much ease, and bends down its head to peep at the objects around.

There are upwards of twenty other American birds which Wilson describes very graphically, such as the brown thrush (*T. rufus*), whose song is emphatic, full of variety, and so loud that, in a serene morning, when the wind is hushed, and before "the busy hum of men" begins, his voice may be distinguished at the distance of half a mile; and the migratory thrush (*T. migratorius*), who is an early songster, frequently commencing before the snow has disappeared, and perching on a stake or fence to begin the prelude to the general concert.

Those who have paid much attention to the songs of birds, have found that there is so wide a distinction between the voices and style of individuals of the same species, that these may be as distinctly recognised as the voice of one man may be known from that of another. Thus Wilson mentions that he was enabled to discriminate the voice of one wood-thrush from that of others, and that he became gradually and perfectly familiar with its peculiarities. The top of a large white oak, that overhung that part of the glen, was usually the favourite pinnacle from whence he poured the sweetest melody, and to this he has frequently listened till night began to gather in the woods, and the fireflies to sparkle among the branches. But, alas! as the poet says,—

"One morn I missed him on the accustomed hill,
Along the vale, and on his favourite tree—
Another came, nor yet beside the rill,
Nor up the glen, nor in the wood was he;"

and a few days afterwards the fragments of the wings and broken feathers of a wood-thrush among the rocks, which had been killed by a hawk, and which the naturalist contemplated with unfeigned regret, assured him that thus he had lost his favourite by a violent death.

THE FERRUGINOUS THRUSH.*

This is a well-known and very distinguished songster of the American continent. It arrives in the neighbourhood of Pennsylvania about the middle or end of April, which is about the time the cherry-trees begin to blossom, and from the tops of the hedge-rows and fruit-trees he sends forth his loud and varied song, which may be heard in the calm mornings at the distance of half a mile, and which bears considerable resemblance to the song of the thrush of our own country. Early in May they make their nest, choosing a thorn bush, low cedar, or a thicket of briars, saplings, or a cluster of vines, for the spot where to build. Like all birds which have their nests near the ground, they appear to be in a state of constant alarm for the safety of their progeny, and their defensive powers are brought into active requisition, and usually with success, their bills being stronger than any other of their tribe in the United States. Hence they are enabled to attack even the black snake, and to repel his assaults.

The food of the ferruginous thrush consists of worms, caterpillars, beetles, and various kinds of berries. He has been accused of scratching up the hills of Indian corn in planting time, and this may be partially true; but Wilson expresses his confident belief that for every grain of maize he may steal he destroys five hundred insects, and that in particular he devours large numbers of a large grub which is more pernicious to the crop than nine-tenths of the whole feathered tribe. This bird is very active in its flight, and may be seen sweeping along, generally at a low elevation, from one thicket to another, with his long, broad tail spread out like a fan.

The great American naturalist has well expressed the feelings which ought to be cherished in regard to the advantages which this bird confers. "In the months of April and May," he says, "when our woods, hedge-rows, orchards, and cherry-trees, are one profusion of blossoms, when every object around conveys the sweet sensations of joy, and heaven's abundance is, as it were, showering around us, the grateful heart beats in unison with the varying, elevated strains of this excellent bird; we listen to its notes with a kind of devotional ecstacy as a morning hymn to the great and adorable Creator of all. The human being who, amidst such scenes, and in such seasons of rural serenity and delight, can pass them with cold indifference, and even contempt, I sincerely pity; for abject must that heart be, and callous those feelings, and depraved that taste, which neither the charms of nature, nor the melody of innocence, nor the voice of gratitude or devotion, can reach."

The sagacity which this interesting bird displays has been well illustrated by some observations made by Mr. Bartram. He reared one of them from the nest, which, when full grown, became exceedingly tame and docile, and he was often allowed to leave the cage in which he was ordinarily confined. On such occasions, he proceeded to flutter about and dust himself in dry sand and earth, and after bathing, washing, and pluming himself, he hunted the insects which might be accessible. He had a decided partiality for wasps, which he would catch, and then knocking them about to break their wings, he would lay them down, then examine if they had any sting, and with his bill squeeze the abdomen to clear it of the reservoir of poison before he would swallow his prey. When in his cage, being very fond of dry crusts of bread, Mr. Bartram tells us, if he found the corners of the crumbs were too hard and sharp for his throat, he would throw them into a dish of water to soften them; then he would pick them out and swallow them. Other curious illustrations of the sagacity thus shown might be adduced; but enough has been advanced, we think, to prove that this is, in many respects, a most interesting little creature.

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* Orpheus Rufus—Swains.

AMERICAN MOCKING-BIRD.*

The American mocking-bird is characterised by the variety of its notes and the extraordinary compass of its voice, and especially by its power of mimicking the notes of other birds and even the noises of beasts. According to the testimony of Fernandez, Nuremberg, and Sir Hans Sloane, this bird is not satisfied with the mere imitation of sounds, but adds to them a softness and grace which the originals do not themselves possess, and for which the Mexicans term it the bird of four hundred tongues. These writers also mention that it mingles action with its song, accompanying the notes with measured movements corresponding to the successive emotions which it was believed to experience. It first rises slowly, with outstretched wings, and then sinks back to the same spot, with its head hanging downwards, in a similar manner to that which the sky-lark sometimes adopts. When it has advanced further in the song, it mounts aloft, and then descends in a spiral direction; and if the notes are brisk and lively, it describes circles in the air. When the notes are loud and quick, it flaps its wings rapidly; and when the notes are unequal, it bounds and flutters in unison; but when becoming tired with the exertion, its notes gradually soften, melt into tender strains, and at length die away; at the same time its action gradually diminishes, and it glides gently and smoothly above the spot on which it is about to alight, till the waving of its wings becomes imperceptible, and finally ceasing, "the little musician remains in the air suspended and motionless," as the kestrel sometimes does when watching for its prey.

Goldsmith states that the mocking-bird is not only possessed of its own natural notes, which are musical and solemn, but that it can assume the tone of every other animal to be found in the forest, from the wolf to the raven. It seems even to delight to lead them astray. He tells us that it will at one time allure the lesser birds with the call of their mates, and then terrify them, when they have come near, with the screams of the eagle. There is no bird in the forest which it cannot mimic, and there is none that it has not at times deceived by its call. But, unlike such as we usually see tamed for mimicking with us, the mocking-bird is ever surest to please when it is most itself. At those times it usually frequents the houses of the American planters; and, sitting all night on the chimney-top, pours forth the sweetest and the most varied notes of any bird whatever.

By far the most circumstantial account, however, of this wonderful bird (which Ray has even gone so far as to place among the fabulous and doubtful species in his Appendix to Willoughby's Ornithology) is given by Wilson in a characteristically graphic passage. "This celebrated and very extraordinary bird," he says, "in extent and variety of vocal powers, stands unrivalled by the whole feathered songsters of this or perhaps any other country; and shall receive from us all that attention and respect which superior merit is justly entitled to. The plumage of the mocking-bird, though none of the homeliest, has nothing gaudy or brilliant in it; and, had he nothing else to recommend him, would scarcely entitle him to notice; but his figure is well proportioned, and even handsome. The ease, elegance, and rapidity of his movements, the animation of his eye, and the intelligence he displays in listening, and laying up lessons from almost every species of the feathered creation within his hearing, are really surprising, and mark the peculiarity of his genius. To these qualities we may add that of a voice, full, strong, and musical, and capable of almost every modulation, from the clear mellow tones of the wood-thrush, to the savage scream of the bald eagle. In measure and accent he faithfully follows his originals; in force and sweetness of expression he greatly improves upon them. In his native groves, mounted on the top of a tall bush or half-grown tree, in the dawn of the dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to *his* music alone, to which that of all the others seems a mere accompaniment. Neither is his strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song birds, are bold and full, and varied seemingly beyond all limits. They consist of short expressions of two, three, or at the most five or six syllables, generally interspersed with imitations, and all of them uttered with great emphasis and rapidity, and continued, with undiminished ardour, for half an hour, or an hour, at a time; his expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arresting the eye, as his song irresistibly does the ear. He sweeps round with enthusiastic ecstasy; he mounts and descends as his song swells or dies away; and as my friend Mr. Bartram has beautifully expressed it, 'He bounds aloft with the celerity of an arrow, as if to recover or recall his very soul, expired in the last elevated strain.'* While thus exerting himself, a bystander destitute of sight, would suppose that the whole feathered tribe had assembled together, on a trial of skill; each striving to produce his utmost effect; so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him, but whose notes he exactly imitates: even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates, or dive with precipitation into the depth of thickets, at the scream of what they suppose to be the sparrow-hawk."

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* Orpheus Polyglottus.—Swains.

The exact period at which the mocking-bird begins to build its nest depends on the latitude in which it may happen to be found; for while in the lower parts of Georgia it commences early in April, those in New York, and in the states of New England, do not begin till the middle of May. This bird displays great discretion in selecting a place for its nest, giving a decided preference to a solitary thorn-bush, an almost impenetrable thicket, an orange-tree, a cedar or holly-bush; and if any of these cannot be obtained but within a small distance of a house, it does not hesitate to build there, not unfrequently choosing an apple or a pear-tree. The nests vary a little with different birds, according to the nature of the materials which may be within reach. A very complete one is described by Wilson as consisting, first, of a quantity of dry twigs and sticks, then withered tops of weeds of the preceding year, intermixed with fine straws, hay, pieces of wool and tow, lined with a thick layer of fine fibrous roots, of a light brown colour.

The eggs of the mocking-bird are four and sometimes five in number, and are of a cinereous blue, marked with large patches of brown. The female usually produces two broods in a season, and if robbed of her eggs, she will even build and lay a third time. She is, however, jealous of her nest, and very apt to forsake it if she be disturbed. Some bird-dealers assert that the parents will actually destroy the eggs, and poison the young, if either the one or the other have been touched. Of this the proof has yet to be produced. During the period of incubation, neither animal nor man can approach the nest without being attacked, and cats are soon made to seek refuge in a speedy retreat. But its special vengeance is directed against the black snake, whose approach is no sooner discovered, than the male darts upon it with the rapidity of an arrow, and dexterously eluding its bite, strikes it incessantly and violently on the head, where it is very vulnerable. The snake soon becomes sensible of its danger, and seeks to escape; but the mocking-bird is only encouraged to redouble its exertions, and, unless its antagonist be of great magnitude, it often succeeds in destroying it. As the strength of the snake begins to flag, the mocking-bird seizes it and lifts it up partly from the ground, beating it with its wings; and when the work is completed, it returns to the nest and pours forth a song in token of victory.

"The native notes of the mocking-bird," according to Wilson, "have considerable resemblance to those of the brown thrush (*turdus rufus*), but may easily be distinguished by their greater rapidity, sweetness, energy of expression, and variety." We have already seen also, that he describes the part of the song not alleged to be imitative as "bold, full, and varied, seemingly beyond all limits;" so that we are at least borne out, by several strong facts, in our opinion of the whole song being original, and not the result of a confused medley of imitations.

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* Travels, p. 32, Introd.

It is a favourite topic with authors to compare the singing of the American mocking-bird and the European nightingale. "It may not be improper," says Daines Barrington, "to consider whether the nightingale may not have a very formidable competitor in the American mocking-bird, though almost all travellers agree, that the concert in the European woods is superior to that of the other parts of the globe." He adds, from his own observation, that its "pipe comes the nearest to our nightingale of any bird I have yet met with."*

Wilson, having never heard the nightingale, could not, of course, make the requisite comparison; but after quoting Barrington's sentiments, he exclaims, "What must we think of that bird, who, in the glare of day, when a multitude of songsters are straining their throats in melody, overpowers all competition; and, by the superiority of his voice, expression, and action, not only attracts every ear, but frequently strikes dumb his mortified rivals; . . . . when the silence of night as well as the bustle of day bear witness to his melody; and when even in captivity, in a foreign country, he is declared by the best judges in that country to be fully equal to the song of their sweetest bird *in its whole compass?* The supposed degradation of his song," he adds, "by the introduction of extraneous sounds and unexpected imitations, is, in fact, one of the chief excellences of this bird; as these changes give a perpetual novelty to his strain, keep attention constantly awake, and impress every hearer with a deeper interest in what is to follow. In short, if we believe in the truth of that mathematical axiom, that the whole is greater than a part, all that is excellent or delightful, amusing or striking, in the music of birds, must belong to *that* admirable songster whose vocal powers are equal to the whole compass of their whole strains."

The movements of the mocking-bird, when domesticated, are very amusing; and while it loses little of its native energy of song, its talent is modified according to the circumstances in which it is placed, and as these may be favourable or otherwise to its development. He whistles for the dog; Cæsar starts up, wags his tail and runs to meet his master. He squeaks out like a hurt chicken, and the hen hurries about with hanging wings and bristled feathers, clucking to protect its injured brood. The barking of the dog, the mewing of the cat, the creaking of a passing wheelbarrow, follow with great truth and rapidity. He repeats the tune taught him by his master, though of considerable length, fully and faithfully. He runs over the quaverings of the canary, and the clear whistlings of the Virginia nightingale, or red-bird, with such superior execution and effect, that the mortified songsters feel their own inferiority, and become altogether silent; while he seems to triumph in their defeat by redoubling his exertions.* Southey, in alluding to this extraordinary bird, has well characterised it as—

> That cheerful one, who knoweth all
> The songs of all the winged choristers;
> And in one sequence of melodious sounds,
> Pours all its music.

The love of variety manifested by the mocking-bird tends to impair its song, when, by domestication, it is brought into contact with sounds which are not of a musical nature. The writer once had a canary, which, when young, was separated from others of its species, and was not, in consequence, initiated into the songs of its fraternity; and the result was, the absorption of all its vocal abilities in a bad but very loud imitation of the chirpings of sundry vulgar sparrows that were accustomed to perch on the neighbouring houses; and it used, with obvious complacency and commendable diligence, thus to exercise all the musical powers of which it was possessed. In a somewhat similar manner to that of this unfortunate canary, does the mocking-bird give way to the influence of example, and thus his imitations of the brown thrush are frequently interrupted by the crowing of cocks; the exquisite warblings of the blue-bird are by no means improved by the screaming of swallows, or the cackling of hens; the shrill reiterations of the whip-poor-will are introduced into the simple melody of the robin; while the notes of the kildeer, the blue-jay, martin, baltimore, and twenty others, succeed with such surprising accuracy, that the uninitiated look round for the originals, and then find that what appeared to be the product of a number of performers is really that of the single bird before us. In both his native and domestic condition, during the solemn stillness of night, as soon as the moon rises in silent majesty, he begins his delightful solo; and continues throughout the livelong night to give a full display of his vocal powers, and to make the neighbourhood ring with his inimitable melody.

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* Phil. Trans. vol lxii. pt. ii. p. 284.

The female is described as so tenacious of her eggs, as to suffer herself to be taken with the nest. Bechstein says, that the parent birds rear only one brood in a season, which helps to account for the scarcity of this beautiful bird. The young in its first plumage, is of a dusky yellowish gray tint above, each feather having the central part grayish brown; the lower parts are yellowish white, each feather having a central brown line; the sides and lower tail-coverts are of a bright yellow; the wings and tail are brown, and marked with yellow, as in the adult. The male is easily distinguishable from the female by its lighter colour. A writer in the "Naturalist" states, that he saw a pair of young birds, in nearly full plumage, exhibited for sale in the public market at Cologne, for which the moderate sum of three shillings was asked.

THE WATER-OUZEL.

Of the water-ouzel a graphic picture has been given by the poet:—

The bird
Is here—the solitary bird that makes
The rock his sole companion. Leafy vale,
Green bower, and hedge-row fair, and garden rich
With bud and bloom, delight him not;—he bends
No spray, nor roams the wilderness of boughs,
Where love and song detain a million wings
Through all the summer morn—the summer eve;—
He has no fellowship with waving woods,—
He joins not in their merry minstrelsy,—
But flits from ledge to ledge, and through the day
Sings to the highland waterfall, that speaks
To him in strains he loves, and lists
For ever.

"Many a time between Buxton and Bakewell," says Mr. W. C. S. Martin, "have we watched the water-ouzel, conspicuous from his snowy breast and russet plumage, no less than for his singular actions and attitudes. He may be seen on some gray limestone mass, rising a foot or two out of the water, in the centre, or at the margin, of the stream; his movements smart and lively, and often grotesque. He jerks his head,—dips it down—and, at the same time, flirts up his short tail; then, in an instant, he plunges into the water and disappears; suddenly he rises at some distance, and settles again on a jutting crag, or stone, and repeats the same aquatic performance. Often he flies for the distance of thirty or forty yards along the course of the river to some favourite resting-place, and there utters a sweet and variable song. We have heard the notes of this charming bird late in autumn, early in spring, and throughout the summer. It sings also at night."

The facility with which the water-ouzel dives and pursues its prey beneath the water is very remarkable; indeed, they seem quite at home in this element, and sport in it with the utmost address and confidence. Mr. Thompson relates, on the authority of an eye-witness, an accurate observer, the following circumstances: "On the 26th of September, a pair of water-ouzels at the upper pond of Wolf-hill (near Belfast), plunged several times into the water, which was some feet deep, and remained moving about in it with only their heads above the surface; twice one of them disappeared altogether for a few seconds, they then pursued each other round the pond, alighted, and one of them sang; they repeated over again several times all these manœuvres." What is still more extraordinary is, that the young, before they are strong enough to fly to any distance, are capable of diving with great address; indeed, when disturbed, as Mr. Selby says, they take to the water instantly, although but half fledged, and dive with perfect ease.

Mr. Thompson says, "Throughout the breeding season of 1832, a pair of these birds frequented a shade erected over a large mill-wheel of forty feet diameter at Wolf-hill, where it was presumed they had a nest, though in such a place it was impossible to discover it. Their appearance, emerging from this gloomy and dark abode, often caused surprise, especially when they sallied forth between the arms of the gigantic wheel when in full motion, which it was almost constantly."

The water-ouzel delights to go through innumerable manœuvres in the water, discovering no hesitation in continued immersions in the stream. It has, however, been remarked, that when it wades deeper than the knee it displays its wings, and hangs them down. One of these birds being watched by a gentleman, who narrated his observations to Buffon, when it was at the bottom of the water appeared enveloped with air which gave it a brilliant surface, like some kinds of beetles, which in water are always enclosed in a bubble of air. Its object in dropping its wings on entering the water may be to confine the air; it was certainly never without some.

On one occasion a pair of these birds built under a small wooden bridge in Carmarthenshire. When visited the bird flew out, and no eggs were found in the nest when it was taken. In a fortnight afterwards five eggs were taken in a nest which had been built in the same place; and in a month later, a third nest was removed from the same bridge, which had four eggs, which it was ascertained belonged to the same pair. On the last occasion the female was sitting, and on leaving it, she instantly plunged under the water, and after disappearing for a considerable time, emerged at a great distance down the stream. The nest of another water-ouzel was also discovered in a steep bank which projected over a rivulet; and the nest was so ingeniously concealed among the moss by which it was surrounded, that nothing but the old bird flying in with a fish would have led to the discovery. The young ones were nearly feathered, but unable to fly, and the moment the nest was disturbed they fluttered out, and dropping into the water, instantly vanished; but in a short time re-appeared at some distance down the stream, and it was with difficulty that two out of five were secured.

THE RING-OUZEL.*

One of Britain's summer visitors is the ring-ouzel, resorting to wild and rocky mountain moorlands, as the Peak of Derbyshire, the Grampian hills, the Welsh mountains, and some parts of Devonshire. It usually leaves the British Isles towards the end of September, but it has been occasionally seen in Ireland during the winter. A bird whose habits are wild and shy, it haunts secluded glens and ravines of rocks, making a nest amidst moss and coarse herbage on the ground, often sheltered by some precipitous bank near a stream. The eggs are of a fine bluish green, with blotches of a darker hue.

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* Merula Torquata.

On any one approaching the place of incubation, the parent-birds utter loud cries, and flying around the intruder, try every artifice to lead him from the spot. The males, it appears, are disposed to be pugnacious. Mr. Thompson relates that, walking, on one occasion, in Crow-glen, near Belfast, with a pointer dog in advance, two male ring-ouzels pursued the dog with the wildest cries, and flew round him so as to strike the air within a few inches of his head. "Many an earnest and expressive look," adds the narrator, "the dog gave me, as if desirous of advice in his extremity; but finding it all in vain, he at length ran up to me, when the birds, nothing daunted, followed and gave myself, as well as two friends near me, the same salute, flying so near that we could almost have struck them with our hands. At the beginning of the onset a female bird appeared, as if inciting the males forward, and remained so long as they were attaining the highest pitch of violence, and then, like another heroine, retired to another eminence to be 'spectatress of the fight.' Had they been a pair of birds protecting their young, or assuming similar artifice to the lapwing, in withdrawing attention from their nest—in which the ring-ouzel is said to be an adept—the circumstance would, perhaps, be unworthy of notice; but they were both male birds in adult plumage. The chase of the dog was continued a considerable way down the glen, and for fully fifteen or twenty minutes."

The male generally sits perched on some crag, or elevated stone, and there utters its song, which consists of a few clear but powerful notes, which have been compared to those of the missel-thrush. The actions and contour of the ring-ouzel closely resemble those of the blackbird, but it is of somewhat larger size. Its food seems to consist principally of insects and their larvæ; in its winter retreats, berries are doubtless sought for. The male ring-ouzel is generally black, with an abrupt gorget, or crescentic mark of pure white across the upper part of the chest. The plumage of the female is more clouded with gray, and the white gorget is smaller.

THE GOLDEN ORIOLE.*

The generic characters of the orioles consist in the increased strength of the beak beyond that of the more typical thrushes, the shortness of the tarsi, and the length of the wings, to which may be added the universal prevalence of a rich golden yellow, constituting the ground colour of the males; while the females are of a dull greenish yellow, inclining to olive. These birds live almost exclusively in trees and thickets, and are generally migratory, assembling together in flocks previous to their departure. At other times they reside in pairs, and weave a beautiful pendent nest at the extremity of the branches of tall and leafy trees. Their food consists of soft fruits, different kinds of berries, and insects. Their flight is rapid and direct, and as they flit along, their golden plumage opened to the sun, exhibits to the best advantage their splendid colouring. The genus comprehends that beautiful European bird, the golden oriole, and eight or nine well-marked species besides from Africa and India.

This bird is common, during the summer months, in France, Italy, and, indeed, all the southern provinces of Europe. In England it is rarely seen. Its food consists of cherries and other garden fruits, as well as wild berries, and insects with their larvæ. Its favourite resorts are groves, orchards, plantations, and wood parks.

The golden oriole builds a purse-like nest of fibres and grasses, artfully woven together, and suspended from a twig of one of the highest branches of a tree. The eggs are five in number, of a pure white, with a few dark-brown spots.

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* Oriolus Galbula.

The general plumage of the male is of a rich golden yellow ; a spot intervenes between the eye and the beak ; and the wings and tail are black, the latter being tipped with yellow. The female and young of the year are of an olive green above, and of a pale yellowish gray beneath, with a streak of grayish brown along the shaft of each feather. The tail is a dark olive.

The favourite abodes of this bird are lonely groves and the skirts of forests, always keeping among the most bushy trees, so that it is rarely seen on a naked branch. Vieillot confirms the statement thus made by Bechstein, describing the golden oriole as shy and difficult to approach. He also states that these birds are sometimes deceived by an expert sportsman, who, advancing towards them, whistles their note ; but so correct is the ear of the bird, that a single mistake or false note, in any imitation of his song, is a sufficient hint to the oriole, which immediately takes wing.

The natural song of the golden oriole resembles that of the missel-thrush, but it is not so musical ; in captivity, however, it learns tunes very readily. Bechstein saw two of these birds reared from the nest, one of which, besides pouring forth its natural song, whistled a minuet, while the other imitated a flourish of trumpets. He alludes, also, to two other birds of this species, kept at Berlin, both of which whistled different airs.

The golden oriole is no exception to the rule, that all migrating birds are far more difficult to keep alive in captivity than such as do not migrate. Bechstein says, so great is the difficulty, that, in spite of the utmost care and attention, none that he ever knew survived a longer time than three or four months. The work of that intelligent naturalist on "Cage Birds" is highly deserving the attention of all who are interested in the "Feathered Tribes" under such circumstances. As to this bird, he recommends, if an old one be caught, that it be kept, at first, in a retired and quiet place, and fed on fresh cherries ; then, by degrees, on ants' eggs and white bread soaked in milk.

There are other orioles, but a description of them is deferred for the present, as they belong to another FAMILY, hereafter to be considered.

THE BLACKCAP.*

The name given to this bird is derived from the hood with which it is provided. Of recluse habits, it frequents the borders of woods, parks, orchards, and groves, concealing itself amidst their foliage. With great alertness of manner, it searches for the caterpillars and insects on the leaves of the trees, and as they feast abundantly on the foliage of the ivy, to this richly clustering plant it specially resorts, being extremely partial to berries. Strawberries, currants, and cherries afterwards regale its appetite, and its last repasts, prior to its departure for the south, is on the berries of the elder. In the island of Madeira it is said to find a permanent abode.

Bechstein says : "A young male which I had put into the hot-house for the winter, was accustomed to receive from my hand a meal-worm ; this took place so regularly, that immediately on my arrival, he placed himself near the little jar where I kept the meal-worms. If I pretended not to notice this signal, he would take flight, and passing close under my nose resume his post ; and this he repeated, sometimes even striking me with his wing, till I satisfied his wishes and impatience." Speaking of captive birds of this species, the same writer remarks, that at the time in which they would naturally migrate they become so much agitated, especially during the night by moonlight (the hour at which they commence their journey), that they often fall ill and die. The same observation equally applies to all migratory birds kept prisoners; the impulse to migrate affects them powerfully,—they flutter their pinions, leap up, and attempt, but in vain, to escape the wiry grate in which they are incaged, and if they survive, appear for some time to be dull and dispirited.

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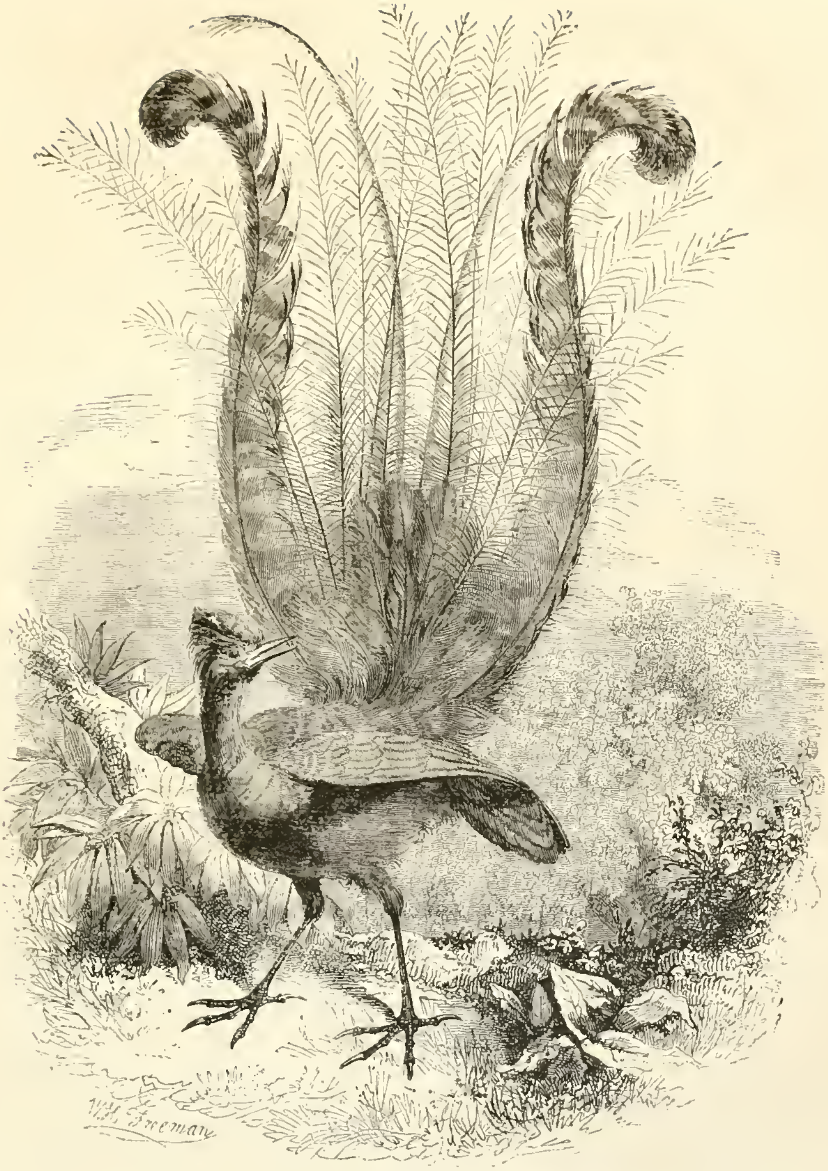
* Curruca Atricapilla.

In captivity, the blackcap requires ants' eggs, and meal-worms, and also various berries, and for winter use elder-berries should be collected and dried; these should be soaked in water before being given, and together with meal-worms added to what Bechstein calls the universal paste, with a little bruised hemp-seed. Fresh water, for bathing and drink, should be supplied every day. Young birds before they moult have little or no distinctive difference of colouring, but the male and female in complete plumage are decidedly different. In the male, the whole of the top of the head is black, the neck and breast gray, the upper parts gray, tinged with oil-green; the under parts ashy gray. The female, which is rather larger than the male, has the top of the head reddish brown; the general tints of the upper surface are of a more decided olive hue. The plumage is remarkable for the delicacy of its texture. This species has a very wide range on the continent.

This species builds its nest amidst thick underwood bushes of whitethorn, or amidst dense brambles. It is well constructed, having without the stems of grasses, wool, moss, and the deserted cocoons of insects, and within a soft lining of fibre and hair. The eggs found there, varying from four to six, are of a yellowish brown, with marks of ash-gray, and spotted with brown..

Second only to the nightingale in its power of song, with a strain less rich, and having less volume and expression, that of the blackcap is more sprightly, warbling, and delicate. It sings not only by day, but also by night during the hours of the season; but even in captivity, its song, except during the season of moulting, is continued throughout the year. The female bird can warble too; but her strain has not such range, and her tone is low. So admirably can the blackcap imitate the notes of other birds, that the ear of the listener may be easily deceived.



THE LYRE BIRD.

At the close of the last century, the Governor of New South Wales endeavoured to check the roving propensities of certain turbulent Irishmen by corporeal punishment; but as this did not prove effectual, he determined to convince them of the difficulties and dangers of a wandering life by actual experience. Four of the hardiest of them were therefore chosen, and fitted out for a journey of discovery, under the charge of three trusty guides, who were to lead them back, when fatigued and exhausted with their journey, over the most difficult and dangerous part of the country. A conspiracy to murder the guides was detected before the party set out, and it was consequently increased by the addition of four soldiers, and began its enterprise on the 14th of

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* Menura Superba.

January, 1798. The project of the governor completely succeeded. On the 24th the soldiers returned with three of the Irishmen, who, on gaining the foot of the first mountains, were so greatly fatigued, and also so fearful of the prospect before them, that they asked to be allowed to return with the soldiers. The rest of the party returned on the 9th of February. They appear to have travelled about one hundred and forty miles in a south-west direction from Paramatta.

They brought in with them a bird, which they called a pheasant; it resembles the common one in size, but its limbs are longer in proportion, and there are other considerable points of difference. The wings are short, concave, and rounded, and the quill feathers are lax and feeble; the general plumage is full, deep, soft, and downy. The tail, however, is very remarkable: it is modified into a beautiful, long, plume-like ornament, representing, when erect and expanded, the figure of a lyre; hence its name—the lyre bird, while, as the type of a new genus, it has received the appellation of *menura superba.*

This ornamented tail is restricted to the male bird. It consists of sixteen feathers; of these the outer one on each side is broadly but loosely webbed within, its outer web being narrow; as it proceeds it curves outwards, bends in, and again turns boldly outwards and downwards, both together resembling the framework of an ancient lyre, of which the intermediate feathers are the strings; these feathers, except the two central, which are truly but narrowly webbed on the outer side, consist each of a slender shaft, with long filaments, at a distance from each other, and springing out alternately. The appearance of these feathers, the length of which is about two feet, is peculiarly graceful; their colour is amber-brown, but the two outer tail-feathers are gray tipped with black, edged with rufous, and transversely marked on the inner web with transparent triangular bars. In the female the tail is long and graduated, and the feathers are perfectly webbed on both sides of the shaft, although their texture is soft and flowing. The general plumage of the *menura* is amber-brown above, tinged with olive, and merging into rufous on the wings and also on the throat. The under parts are ashy-gray. Mr. Gould says that, were he requested to suggest an emblem for Australia among its birds, he would select the *menura* or lyre bird as being the most appropriate, being not only strictly peculiar to Australia, but, as far as is yet known, to the colony of New South Wales.

The bird is exceedingly shy, and hence the same eminent naturalist says: "While among the brushes I have been surrounded by these birds, pouring forth their loud and liquid calls for days together, without being able to get a sight of them; and it was only by the most determined perseverance, and extreme caution, that I was enabled to effect this desirable object, which was rendered the more difficult by their often frequenting the most inaccessible and precipitous sides of gullies and ravines, covered with tangled masses of creepers and umbrageous trees; the cracking of a stick, the rolling down of a small stone, or any other noise however slight, is sufficient to alarm it; and none but those who have traversed these rugged, hot, and suffocating brushes can fully understand the excessive labour attendant on the pursuit of the *menura.* Independently of climbing over rocks and fallen trunks of trees, the sportsman has to creep and crawl beneath and among the branches with the utmost caution, taking care only to advance when the bird's attention is occupied in singing, or in scratching up the leaves in search of food. To watch its actions it is necessary to remain perfectly motionless, not venturing to move even in the slightest degree, or it vanishes from sight as if by magic."

In some of the more accessible brushes, it may, however, be frequently seen, and even on horseback be closely approached, the bird apparently showing less fear of a horse than a man. The bird is sometimes pursued by dogs trained to rush suddenly upon it, when it immediately leaps upon the branch of a tree, and, its attention being attracted by the dog which stands barking below, it is easily approached and shot. Another mode of capturing this bird is by wearing the tail of a full-plumaged male in the hat, keeping it constantly in motion, and concealing the person among the brushes, when the attention of the bird being arrested by the apparent intrusion of another of its own sex, it will be attracted within the range of the gun. If the bird be hid from view by surrounding objects, a shrill whistle, or any other unusual sound, will generally induce it to show itself for an instant, by causing it to leap with a gay and sprightly air upon some neighbouring branch, to ascertain the cause of the disturbance, when it easily becomes the prey of an expert shot.

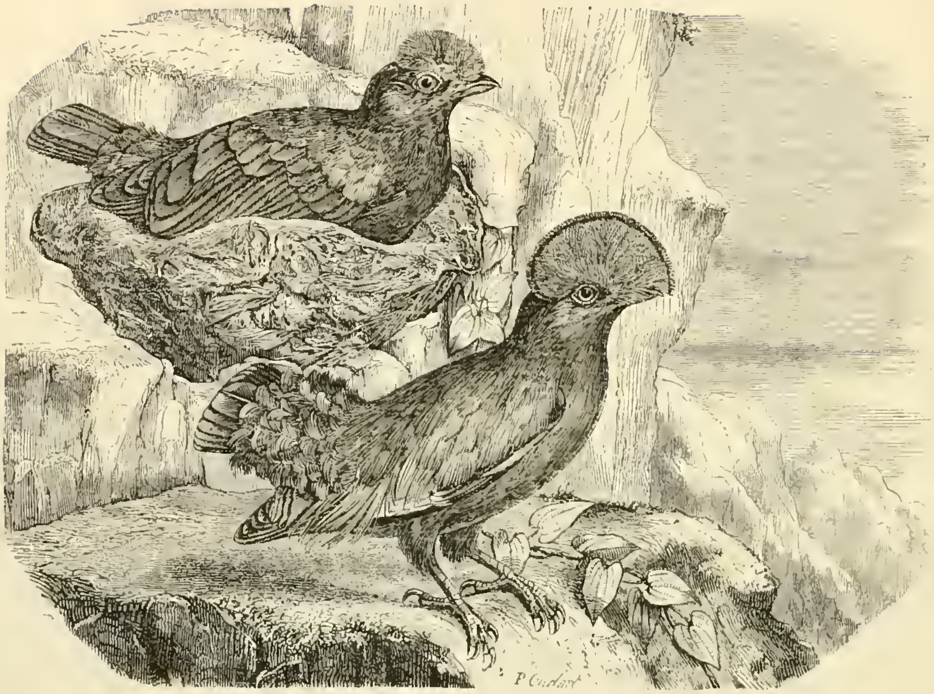
"It is much to be regretted," Mr. Bennett justly remarks, "that human beings are so eager to destroy, even to extermination, the races of animals, useful or dangerous, which may be found in a new country. In the settled parts of a colony, the harmless kangaroos and emus are rarely seen, when they might be easily domesticated about the habitations. The same remark applies to the lyre pheasant. Why are they not domesticated before, by extermination, they are lost to us for ever?"

These birds build in old hollow trunks of trees which are lying on the ground, or in the holes of rocks. The nest is merely formed of dried grass, or dried leaves scraped together. The female lays from twelve to sixteen eggs, of a white colour, with a few scattered light blue spots. One nest was observed placed on a prominent point of a rock, in a situation quite secure from observation from behind, but affording the bird a commanding view and easy retreat in front. It was of large size, formed outwardly of sticks; it was deep and basin-shaped, and lined inwardly with the inner bark of trees and fibrous roots; and it had the appearance of having been roofed.

The lyre bird is of a wandering disposition, and though keeping probably to the same brush, it constantly traverses it from one end to the other, from the mountain-top to the bottom of the gullies. It is said to be able at one leap to pass over as much as ten feet in a perpendicular direction from the ground. It seldom takes wing, but is fond of traversing trunks of fallen trees, and frequently reaches a considerable height, by leaping from branch to branch.

Solitary in its habits, it sometimes shows a different disposition. On one occasion Mr. Gould saw two males at play; they were chasing each other round and round with extraordinary rapidity, pausing every now and then to utter their loud shrill calls. While thus occupied they carried their tails horizontally, as they always do when moving quickly through the brush, that being the only position in which this large organ could be conveniently borne at such times.

The lyre bird has a habit, similar to that of some others, of forming small round hillocks, which are constantly visited by day, and on which the male is continually trampling, at the same time gracefully erecting and spreading out its tail, uttering its various cries, pouring forth its natural notes, mocking those of other birds, and even imitating the barking of the native dog. It has not only a loud full call, which may be heard reverberating over the gullies at a considerable distance, but an inward and varied song, the notes of which can only be heard within a few yards of the bird. This animated strain is frequently broken off abruptly, and again resumed with a low, inward, and snapping noise, ending with an imitation of the loud and full note of the satin-bird, and always accompanied with a tremulous motion of the tail.



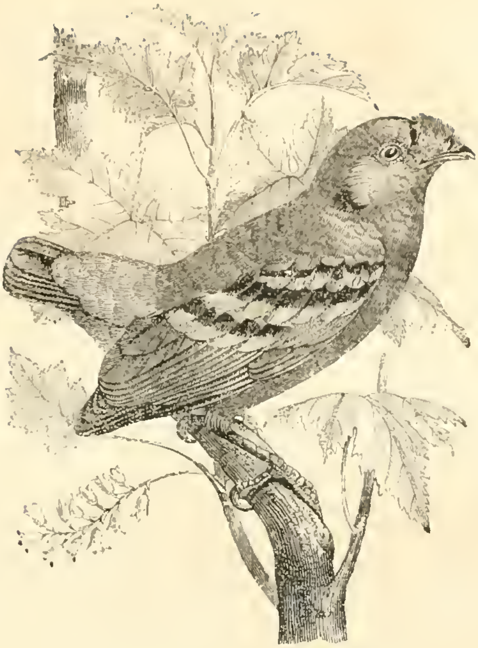
RUPICOLA AURANTIA.

The Fifth Family of the Dentirostral tribe consists of the *Pipridæ,* or the Manakins. These birds form an extensive family; Latham enumerates some forty of them. They appear to be a restless class of birds, like some found in our own country, who seem ever to be on the alert in pursuit of knowledge under difficulties, of the organisation and tenantry of every spray of every bush which they can visit.

The engraving represents the rock manakin, one of the most elegant birds of the present family. It is a native of South America, inhabiting the rocky and mountainous districts along the rivers of Surinam, Cayenne, and Guiana; and probably it may be found along the whole range of the river Amazon, with its tributary branches. According to Latham, it is nowhere so frequent as in the mountain Luca, near the river Aprouack, where it builds in the cavernous hollows and dark recesses. The nest is composed of a few dry sticks, and the eggs are two in number, of the size of those of a pigeon, and equally white.

The rock manakin is a shy and solitary bird, preferring silent and secluded glens, and rocky ravines, to all other spots; and there it seems to pass an undisturbed existence. Waterton states that it is a native of the woody mountains of Macoushia, a tract on the Apoura-poura, a tributary river falling into the Essequibo from the south, inhabited by the Macoushi Indians, so celebrated for their skill in preparing the deadly vegetable poison wourali, with which they smear the points of their arrows. In the day-time it retires among the darkest rocks, and only comes out to feed a little before sunrise and at sunset. So gloomy is its disposition, that it never associates with the other birds of the forest.

H. Weir del.



THE CALYPTOMENA VIRIDIS.

The Calyptomena viridis, of which we give an engraving, was so named by Horsfield; it is called by Temminck *Rupicola viridis.* It inhabits some of the islands of the East, as Sumatra and Java. Its plumage is of a beautiful emerald green; and its wings are traversed by three black bands. The colour of this bird so blends with that of the tree on which it lives that the observation of it is not easy, and hence the species appears to be rare.

THE FORK-TAILED MANAKIN.*

The Fork-tailed Manakin is one of the birds which represents this family in America. Its beak is short and bent; its tail, as the name of the bird implies, is greatly forked.

Great numbers of the true manakins, forming the restricted genus *Pipra;* are discovered in caverns, where one cannot enter except with torches. The male and female are equally lively and extremely wild. It is impossible to shoot them, except by remaining concealed behind a rock for some hours; for the instant they perceive the hunter, they fly off very rapidly; but their flight is short and low. The males issue from the caverns more frequently than the females, which seldom show themselves, and probably only come out during the night. They have the habit of scratching the ground, and clapping and shaking their wings like cocks and hens; but this is the only point of relation between them and the latter birds, for they neither have the crowing of the cock nor the crying of the hen. They are easily tamed, and sometimes left at liberty to live and run about with the poultry.

The manakins, which have been principally observed in Guiana, prefer humid and cool woods to the hot and dry lands. They do not, however, frequent marshes, or the borders of streams. They only perch on the middle branches of trees in the woods, which they never quit to proceed into the open plains or to the neighbourhood of habitations. They assemble in the morning, in small troops of from eight to ten in number of the same species, and frequently join company with other small birds. At such times their chirping is rather agreeable. But about nine o'clock they separate, and retire alone, until the following day, into the most shady recesses of the forests. Their food consists of little wild fruits; they also eat insects.

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* Ampelis Garrulus.—Penn.

The Cotingas, having a weak bill, seek insects, berries, and tender fruits. They reside in the humid places of America, and are remarkable for the purple and azure colours of the plumage of the males during the breeding season. During the rest of the year both sexes are tinted gray brown.

The Scarlet Cotinga * is found, Mr. Waterton states, in the deepest recesses of the forest: its crown is flaming red; to this abruptly succeeds a dark shining brown, reaching half way down the back. The remainder of the back, the rump, the tail, the extremity of which is edged with black, are of a lively red: the breast reddish black, the wings brown. This bird has no song: it is solitary, and utters a monotonous whistle, which sounds like "Quet." It is fond of the seeds of the hitea tree, and those of the siloabali, which ripen in December, and continue on the trees for above two months. It is found throughout the year in Demerara; but nothing is known of its incubation.

Intimately connected with the genus *Ampelis* is that of *Procnias*, which includes the Campanero, or Bell-bird of South America. This bird is about the size of the jay, and its plumage is white. A spiral tube rises from its forehead, extending, as Waterton assures us, to no less than three inches in length, and communicating with the palate in such a way that when filled with air it looks like a spire. At other times it hangs down. The note of this bird is loud and clear, like the sound of the tolling of a bell, and we are assured that it falls upon the ear so suddenly and solemnly that it is often very startling. The toll of its voice sounds through the far-stretching wood, and then there is a silence; again the toll is repeated, and so distinctly is it uttered that it may sometimes be heard at the distance of three miles.

THE BOHEMIAN WAXWING.†

The Bohemian waxwing, or waxen chatterer, is eminently distinguished both by the gracefulness of its form and the brilliance and variety of the colours with which its plumage is adorned. It is about the size of the starling, having a short, strong beak; the head and upper parts are brown, and the feathers on the crown of the head form a pointed crescent; the under parts are ashy brown, the tail is black, tipped with yellow, the wings are long, the legs and toes are short and strong, and the tarsus is shorter than the middle toe.

This bird is a winter visitor to Britain, coming hither from northern latitudes, and sometimes large flocks of them have been found dispersed in various parts of the kingdom. Only a few reach the southern countries. The country in which the young are reared appears not to be known with any degree of accuracy, though the waxwing has been affirmed to be a native of Tartary, breeding among the rocks of that land. By others it has been suggested, as most probable, that its chief place of abode is the extensive table-lands of central Asia; while M. Temminck states that the European waxwing breeds in the eastern parts of the north of Europe, and lives in the northern parts of Asia.

Dr. Richardson affirms that it was discovered in America, near the sources of the Elk river, and by himself in the neighbourhood of Great Bear lake, and that in its autumn migration southwards, it must cross the territory of the United States, if it does not actually winter within it, although he had not heard of these birds being seen in America to the southward of the fifty-fifth parallel of latitude. This bird appears in flocks at Great Bear lake about the close of May, when the spring thaw has exposed the berries of the Alpine arbutus and other plants which have been frozen in during the winter. Dr. Richardson also mentions that he observed a large flock, consisting of, at least, three or four hundred, on the banks of the Saskarchewan, in May 1827. They alighted in a grove of poplars, settling on one or two trees, and making a loud twittering noise. They stayed only about an hour in the morning, and were too sly to allow him to approach within gunshot.

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* Ampelis Carnifex.

† Bombycivora Garrula.

THE TITMICE.*

The genus *parus*, under which the titmice are classed, contains various species. They are remarkable for the beautiful colours of their plumage, while the markings are very nicely defined. Always active, these birds attract the attention of the intelligent observer, as, ardently engaged in the pursuit of food, they climb the trunks of trees, or hang suspended from the under surface of its branches, intent on the examination of any cavity, bud, or leaf.

The one placed first in the series is the Great Tit,† being the largest in size. This bird does not migrate, but remains in the same district throughout the year. It is adapted, too, to great diversity of climate, as it is found in the genial region of Italy and in the severe one of Russia. In England, however, it inhabits woods, the neighbourhood of gardens and other enclosed spots in summer, and in winter it approaches the dwellings of men. It forms a nest of moss, which it lines with hair and feathers, and places it in the hole of a wall, or the hollow of a tree. It sometimes chooses the deserted abode of a crow or a magpie. The eggs vary from six to nine in number; they are white, spotted and speckled with pale red.

THE BLUE TIT.‡

This bird, often called the Tomtit, would be much more admired for its beauty were it less common. Its length is about four inches and a half. The bill is dusky; the irides dark hazel; the forehead and cheeks white, the white extending backwards in a band over the eyes; the crown of the head azure blue. The nape of the neck has a blue band which, passing forward on each side under the cheeks, joins a patch of blackish blue colour which descends from the chin over the throat. The wings and tail are of a pale blue; the legs, toes, and claws are of a bluish black.

"The bill of this bird," says a naturalist, "though short, is exceedingly strong; and from the active industry of its habits, I have little doubt that when it cannot find a hole suitable for its nest, it either hews out one or enlarges it to its mind. In one of these nests, which I lately examined, in the hole of an oak at Shooter's-hill, in Kent, the wood, which was indeed decayed and soft, had evidently been cut away so as to give an upward winding entrance to the nest; and I have remarked a similar winding, either upwards or on one side, in the nests of this bird built in old stone walls, mortar or small stones having, probably, been removed with this design. The power of its bill in such cases I had an opportunity of witnessing, in one which was kept in a cage. In a common wire-cage it could not be confined for many minutes, as it always warped the wires aside, first with its bill, and then with its body, till it got out; but it did not find it so easy to escape from a cage made with netted wax thread, upon finding which unmanageable, it attacked the wood-work, and into one of the dovetailings of this it thrust its bill, acting with it in the manner of a wedge. It was unsuccessful, indeed, in unhinging this, but I have no doubt that half the force and skill it exhibited would have proved sufficient to hew out a nest-hole in a decayed tree."

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* Parus.

† Parus Major.

‡ Parus Cæruleus.

THE CRESTED TIT.*

The Crested Tit inhabits Denmark, Sweden, and the more temperate parts of Russia. In the latter country it is said to remain all the year, building its nest in the holes of trees among the pine-forests, and living on insects and small seeds. It is found, also, in the forests of Germany and amidst the tree-covered mountains of Switzerland. It is rare as a British bird, but Latham says, "We have heard of this species being plentiful in some parts of Scotland, especially in the pine forests, from whence I have received a specimen, now in my possession." To this statement may be added that of Colonel Montague: "The Crested Tit has not been found in South Britain, but is not uncommon amongst the large tracts of pines in the north of Scotland, particularly in the forest of Glenmoor, the property of the Duke of Gordon, from whence we have seen it.

The Crested Tit is a solitary retired species, inhabiting only gloomy forests, particularly those which abound in evergreens. Its weight is about two drams and a half, and its length four inches and three quarters. The nest, according to Temminck, is built in the deserted nest of the crow or squirrel. The eggs are said to be white with small spots of red.

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* Parus Cristatus.

THE LONG-TAILED TIT.*

The Long-tailed Tit is no rarity: amidst woods, shrubberies, and tall hedges, it may be frequently seen. It has the usual activity of its species, and remains in England throughout the year.

"The nest of this species," says our distinguished naturalist, Mr. Yarrell, "is an example of ingenious construction, combining beauty of appearance with security and warmth. In shape, it is nearly oval, with one small hole in the upper part of the side by which the bird enters. I have never seen more than one hole. The outside of this nest sparkles with silver-coloured lichens adhering to a firm texture of moss and wool, the inside profusely lined with soft feathers. The nest is generally placed in the middle of a thick bush, and so firmly fixed, that it is mostly found necessary to cut out the portion of the bush containing it, if desirous of preserving the natural appearance and form of the nest.

"In this species the female is known to be the nest-maker, and to have been occupied for a fortnight or three weeks in completing her habitation. In this she deposits from ten to twelve eggs; but a larger number are occasionally found; they are small and white, with a few pale red specks, frequently quite plain. The young family of the year keep company with the parent birds during their first autumn and winter, and generally crowd close together on the same branch at roosting time, looking, when thus huddled up, like a shapeless lump of feathers only. These birds have several notes, on the sound of which they assemble and keep together. One of these call-notes is soft and scarcely audible; a second is a louder chirp or twitter; and a third is of a hoarser kind."

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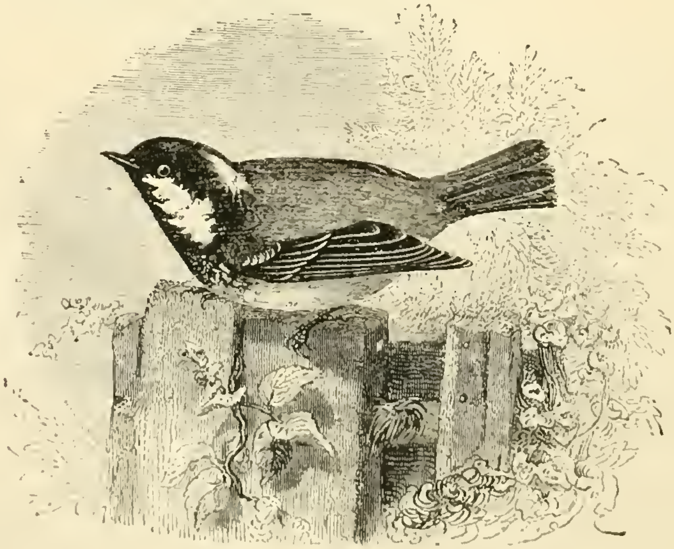
* Parus caudatus.

The nests of the Tits are often found in singular places. One pair reared their abode in the upper part of an old pump, fixing it on the pin in which the handle worked. It happened that during the time of building and laying the eggs, the pump had not been in use; when again set going, the female was sitting, and it was naturally supposed that the motion of the pump-handle would drive her away. But the young brood were hatched safely, without any other misfortune than the loss of part of the tail of the sitting bird, which was rubbed off by the friction of the pump-handle. Another pair chose a pump-handle for the same purpose, and for several days persevered in inserting, close upon the joint of the handle, the materials for a nest, though every time the handle was raised, they were either crushed or forced out, till the patience of the little builders was utterly exhausted.

THE COLE-TIT.*

The Cole-tit is a woodland bird. Its favourite locality appears to be the fir plantations, on places that are rather elevated and dry, and while the trees are so young as to be branched near the ground, or on the outskirts of the natural forests, where the trees are more apart than in the centre, and never so completely lose their natural branches, and where young ones have space and air to spring up.

This bird has the black on the head extending to the lower part of the neck, but pied with three bright and very conspicuous patches of white; an oblong one from the gape to the lower part of the neck, on each side, pointed forward at the upper extremity and backwards at the lower, and in some positions of the head extending to the white on the shoulder, and one on the nape wholly within the black at the lower edge. The head of the Cole-tit is rather flattened on the crown.



THE COLE-TIT.

This bird has a song—not indeed of many notes, or of mellifluous inflexions; it is little else than the same note repeated four or five times, but it has so much variety of pitch and tune as to form a sort of cadence, "which," it has been said, "would make a

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† Parus Ater.

good variety anywhere, as it is shrill and clear; and which is particularly welcome and cheering in those mountain woods which the summer warblers but rarely visit. The bird sings in the noon-tide heat, when most birds, and especially those on the open wastes, with which the haunts of this species are usually interspersed, are silent. While the Cole-tit is singing away in the plantation of half-grown pines, often heard, but seldom seen, the marsh species may be seen flitting about among the long and fragrant bloom which often grows thick in the neighbourhood; but as the one is heard while the other is seen, that causes them to be confounded."

THE CEDAR-BIRD.*

This bird has a graceful crest, which can be so lowered and contracted close to the neck as not to be observed, but which, when erected, gives it a gay and elegant appearance. Its plumage is of an exquisitely fine and silky texture, and extremely smooth and glossy. It is often regarded as one of the "chatterers," yet it makes only a feeble lisping sound, chiefly when it rises or alights.

The Cedar-birds fly in compact bodies, of from twenty to fifty; and usually alight so closely together on one tree, that the half of them are frequently shot down at one time. In the months of July and August, they collect together in flocks, and retire to the Blue Mountains, and other collateral ridges of the Alleghany, to enjoy the fruit of the whortle-berries, which grow there in the greatest profusion. In October, they descend to the lower and cultivated parts of the country, to feed on the berries of the sour gum and red cedar, of which last they are immoderately fond. Thirty or forty of these birds may sometimes be seen fluttering among the branches of one small cedar-tree, and eagerly plucking off its fruit. They are also found as far south as Mexico.

The nest is large for the size of the bird, and is fixed in the forked or horizontal branch of an apple-tree, ten or twelve feet from the ground. Its exterior and its lower part are formed of a mass of coarse, dry stalks of grass; the inside is entirely lined with very fine stalks of the same material. There are three or four eggs of a dingy bluish-white, thick at the great end, tapering suddenly, and becoming very narrow at the other. They are marked with small, roundish spots, of various sizes and shades of black, and the great end is of a dull, pale purple tinge, marked likewise with various shades of purple and black. The female, if disturbed, darts from the nest in silence to a considerable distance; but no notes of wailing are heard from either parent, nor are they even seen, though the cause of the alarm be in the tree, examining the nest and the young. "The season of love," says Wilson, "which makes almost every other small bird musical, has no such effect on them; for they continue, at that interesting period, as silent as before."

Audubon states that these birds are excellent fly-catchers, spending much of their time in the pursuit of winged insects, but having little vivacity or energy of action. They start from the branches and give chase to the insects, ascending after them for a few yards, or move horizontally towards them, perhaps rather further than when ascending, and as soon as the prey is secured, return to the spot, where they continue watching with slow motions of the head. Towards evening this amusement is carried on for half an hour or an hour at a time, and is continued longer at the approach of autumn, the berries then becoming scarcer.

This species is peculiar to America. Very few of them, however, remain the whole winter in the middle states.

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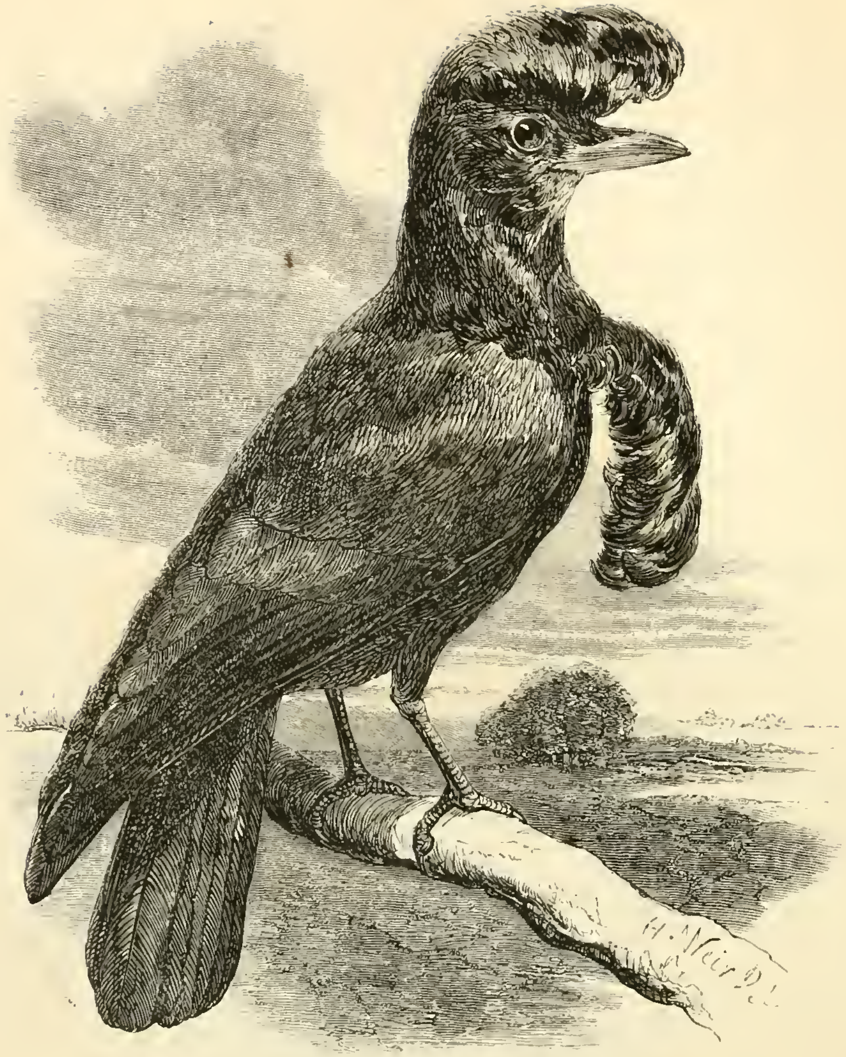
* Ampelis Americana.



THE UMBRELLA BIRD.*

In thus passing from family to family, and from individual to individual of the feathered tribes, we can scarcely fail to be struck with our familiarity with some of them, acquired, however, more probably from the statements of the naturalist and the representations of the artist, than from actual observation. When, on one occasion, the question was put, "How many birds can you count up that you actually know?"—the answer, which was supposed at first likely to include many, comprised really very few;—a result which would often arise, were the question still repeated.

At other times the object presented to our view is unquestionably strange, and so it is in the present instance. This bird, equally curious and beautiful, yet still very rare in our Ornithological collections, is brought from the country bordering the river Amazon. Its name is derived from the full outspreading plumes which tower above its head, resembling the horse-tail crest of the helmets of Greece. It is about the size of a jay; from the upper part of the chest depends a sort of apron or screen, of square-edged feathers, which is very graceful. The tail is graduated. The whole of the plumage is jet black, with rich violet reflexions, especially on the chest and crest plumes.

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* Cephalopterus.

THE WRENS.

THE WREN.*

The nest of the Wren is curiously constructed of moss lined with feathers, its shape being almost oval, with one small entrance only. It is most frequently made in some corner of an out-house, stack of wood, or hole in the wall, near the dwellings of men; but when the wren builds in the woods, it is commonly in a bush near the ground, or on the stump of a tree, but it is sometimes made on the ground. It is very remarkable, that the materials of the nest are generally adapted to the place where it is formed: if against a hay-rick, its exterior is composed of hay; if against the side of a tree clad with white lichens, it is covered with the same substance; and again, if it is built against a tree covered with green moss, or in a bank, its exterior always corresponds in appearance. The wren does not, as is usual with most birds, begin the bottom of its nest first; when it is made against a tree, it begins by tracing the outline on the bark, and thus fastens it with equal strength to all parts.

The peculiarities of the manners of the wren have often been remarked. Audubon has described it in terms which appear to be universally applicable to all the varieties of the species. "Its tail," he says, "is almost constantly erect; and before it starts to make the least flight, it uses a quick motion, which brings its body almost in contact with the object on which it stands. The quickness of the motions of this little bird is fully equal to that of a mouse: it appears, and is out of sight in a moment; peeps into a crevice, passes rapidly through it, and shows itself at a different place the next instant. These wrens often sing from the roof of an abandoned flat-boat. When the song is finished, they creep from one board to another, thrust themselves through an auger-hole, entering the boat's side at one place, and peeping out at another."

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* Sylvia Troglodytes.—Penn.

Clare asks justly:—

"Why is the cuckoo's melody preferr'd,
And nightingale's rich song so fondly prais'd,
In poets' rhymes? Is there no other bird
Of nature's minstrelsy, that oft hath rais'd
One's heart to ecstasy and mirth so well?
I judge not how another's taste is caught;
With mine are other birds that bear the bell,
Whose song hath crowds of happy memories brought;
Such the wood-robin singing in the dell,
And little wren, that many a time hath sought
Shelter from showers in huts where I may dwell,
In early spring, the tenant of the plain,
Tending my sheep; and still they come to tell
The happy stories of the past again."

A remarkable event in the economy of this bird took place during the same winter,* in the total disappearance of the whole tribe, the natives as well as the strangers, throughout Scotland and the north of England. This happened towards the conclusion of the following January, and a few days previous to the long-continued snow-storm so severely felt through the northern counties of England, and along the east of Scotland. The range and destination of this migration were undiscovered, but it must in all probability have been a distant one, from the fact of not a single pair having returned to breed, or to pass the succeeding summer, in the districts they had been known to frequent; nor was one of the species to be seen till the following October, which is about the usual time for receiving the annual accession of strangers to our own indigenous birds.

Mr. Thompson, in his paper on the "Birds of Ireland," introduces the following note from the late Mr. T. F. Neligan, of Tralee:—"To hunt the wren is a favourite pastime of the peasantry of Kerry, on Christmas-day. This they do, each using two sticks, one to beat the bushes, the other to fling at the bird. It was the boast of an old man, who lately died at the age of a hundred, that he had hunted the wren for the last eighty years on a Christmas-day. On St. Stephen's-day, the children exhibit the slaughtered birds on an ivy bush, decked with ribbons of various colours, singing the well-known song, 'The wren, the wren, the king of all birds,' and thus collect money." We believe that this degrading practice is falling into disuse. The wren, from some cause or other, which we cannot trace out, has in various countries, and from a very early period, been called the king of birds. It was called *βασιλευς* by the Greeks, and reported to fight with the eagle. The Italians call it *reattino* (little king), *re di siepe* (king of the hedge), and *re degli uccelli* (king of the birds); the Spaniards, *reyezuelo* (little king); the Portuguese, *ave re* (king bird); the French, *roitelet* and *roi de froidure;* the Germans, *schneekönig* (snow king), and *thurn-könig* (thorn-king). Similar titles have been given to the gold-crest, but in this instance the reason is manifest—it wears the semblance of a golden crown.

But, let us listen to one of our poets:—

There is a bay, all still and lone,
And in the shade one broad gray stone,
Where at the evening hour,
The sun upon the water weaves
Motions of light among the leaves
Of a low-hanging bower;

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* Memoirs of Wernerian Society, vol. v.

And one old sycamore that dips
Into the stream its dark-green tips,
And drinks all day and night:
And opposite, the mountain high
Doth intercept the deep blue sky,
And shuts it out from sight.

Last year it was my haunted seat,
And every evening did I meet
A grave and solemn wren:
He sat and never spoke a word,
A holy and religious bird
He seemed unto me then.

I thought perchance, that sin and strife
Might in a winged creature's life,
Be somehow strangely blent:
So hermit-like he lived apart,
And might be in his little heart
A woodland penitent!

Deceitful thing! into the brook
Hour after hour, a steadfast look
From off his perch was sent:
And yet, I thought his eyes too bright,
Too happy for an anchorite
On lonely penance bent.

Ah! yes, for long his nest hath been
Behind yon alder's leafy screen
By Rothay's chiming waters;
Two rapid years are run, and now
This monk hath peopled every bough
With little sons and daughters.

I will not blame thee, Friar Wren,
Because, among stout-hearted men,
Some truant monks there be;
And, if you could their names collect,
I rather more than half suspect
That I should not be free.

Ere while I dreamed of cloistered cells,
Of gloomy courts and matin bells,
And painted windows rare;
But common life's less real gleams
Shone warm on my monastic dreams,
And melted them in air.

My captive heart is altered now;
And, had I but one little bough
Of thy green alder tree,
I would not live too long alone,
Or languish there for want of one
To share the nest with me!

A correspondent in Loudon's Magazine of Natural History (iii. 568,) says: "Many wrens' nests may be found, which have no feathers, but did you ever find either eggs or young in them? As far as my observation goes, the fact is, that the nest in which the wren lays its eggs is profusely lined with feathers; but during the period of incubation, the male, apparently desirous to be doing something, constructs half-a-dozen nests in the vicinity of the first, none of which are lined; and whilst the first nest is so artfully concealed as to be seldom found, the latter are very frequently seen. The wren does not appear to be very careful in the selection of a site for the '*cock-nests,*' as they are called by the schoolboys in Yorkshire. I have frequently seen them in the twigs of a thick thorn hedge, under banks, in haystacks, in ivy bushes, in old clumps, in the loopholes of buildings, and, in one instance, in an old bonnet placed among some peas to frighten away the blackcaps."

To the death of the smaller songsters, during severe winters, Cowper pathetically alludes:—

"How find the myriads, that in summer cheer
The hills and valleys with their ceaseless songs,
Due sustenance,—or where subsist they now?
Earth yields them nought; the imprison'd worm is safe
Beneath the frozen clod; all seeds of herbs
Lie cover'd close; and berry-bearing thorns
That feed the thrush (whatever some suppose),
Afford the smaller minstrels no supply.
The long protracted rigour of the year
Thins all their numerous flocks. In chinks and holes
Ten thousand seek an unmolested end,
As instinct prompts; self-buried ere they die."

Mr. Allan Cunningham, when writing to a friend, says:—"I have once or twice in my life had an opportunity of answering that touching inquiry of Burns,—

'Ilk happing bird, wee, hapless thing,
That in the merry months o' spring
Delighted me to hear thee sing,
What comes o' thee?
Whare wilt thou cower thy chitt'ring wing
An' close thy e'e?'

One cold December night, with snow in the air, when I was some ten years old or so, I was groping for sparrows under the eaves in the thatch, where you know they make holes like those bored by swallows in the river banks. In one of these holes I got a handful of something soft; it felt feathery and warm, and a smothered chirp told me it was living. I brought it, wondering, to my father's house, and took a look at it in the light. The ball consisted of four living wrens rolled together, the heads under their wings, and their feet pulled in, so that nothing was visible outside save a coating of mottled feathers. This I took to be their mode of keeping themselves warm during the cold of winter. If you ask if I am sure my memory serves me rightly, I answer yes; for having allowed one of the wrens to escape, it flew directly to where my father was reading at a candle, and I had the misery of receiving at his hands one of those whippings which a boy is not likely soon to forget.

"When eighteen years old, or thereabouts, I met with something of the same kind; there was a difference, indeed, in the birds, for on this occasion they were magpies—not birds of song, but of noise. I went out with my brother, now in the navy, one fine moonlight winter night, to shoot wood-pigeons in a neighbouring plantation. The wind was high, and we expected to find them in a sheltered place, where the soil was deep, and the spruce firs had grown high. As I went cowering along, looking through the branches between me and the moon, I saw, what seemed as large as a well-filled knapsack, fixed on the top of a long, slender ash-tree, which had struggled up in spite of the firs, which you know grow very rapidly. I pointed it out to my brother, and seizing the shaft of the tree, shook it violently, when if one magpie fell to the ground, there were not less than twenty dropt in a lump at my feet. Away they flew screaming in all directions. One only remained on the spot which they occupied on the tree, and I shot it, and so settled what kind of birds had been huddled together to avoid the cold. I looked at them before I shook them down for a minute's space or more, and could see neither heads nor feet; it seemed a bundle of old clouts or feathers."

THE GOLDEN-CRESTED WREN.*

This bird has been spoken of as a citizen of the world, being found not only in Europe, in North and South America, and the West Indies, but also in Africa and India. It is an active, unsuspicious little creature, climbing over and sometimes hanging from the branches of the pine, spruce, cedar, juniper, and other evergreens, in which it finds its favourite haunts, and where it searches for the larvæ of insects and for small flies which form the staple of its food. Here, too, it finds a nook where it may hang its nest, which is formed outwardly of moss and lichens, and is lined warmly with down. The female lays six or eight white eggs.

Dr. Latham remarks, in reference to this bird, "it seems to frequent the oak-trees in preference to all others. I have more than once seen a brood of these in a large oak, in the middle of the lawn, the whole little family of which, as soon as able, were in perpetual motion, and gave great pleasure to many who viewed them. The nest of one of these has also been made in a garden on a fir-tree; it was composed of moss, the opening on one side, and in shape roundish; it was lined with a downy substance, fixed with small filaments. It is said to sing very melodiously, very like the common wren, but weaker."†

The golden-crested wren is about four inches long. Its back is a fine yellow olive; a white line passes round the frontlet, extending over and beyond the eye on each side; above this another line or strip of deep black passes in the same manner, extending further behind; between these two strips of black lies a bed of glossy golden yellow, which, being parted a little, exposes another of a bright flame colour, extending over the whole upper part of the head. When the little warbler flits among the branches, in pursuit of insects, he opens and shuts this golden ornament with great adroitness, which produces a striking and elegant effect. The breast and the sides under the wings are a light cream colour; the wings are dusky, edged externally with olive yellow; the tail is rather long, forked, and dusky, the exterior vanes being broadly edged with olive yellow; the legs are brown, and the feet and the claws yellow. The upper mandible of the bill is notched at the point, and furnished at the base with bristles that reach halfway to the point; and, what is peculiar and singular in this bird, the nostril on each side is covered by a single feather, much resembling the antennæ of some insects, and is half the length of the bill.*

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* Regulus Cristalus.

† Synopsis ii. 509.

At this season its numbers are augmented by arrivals from the north of Europe—for the range of this bird on the continent extends to the arctic circle, and occasionally vast flights are driven exhausted upon our coast. Of this Mr. Selby gives the following instance, which fell under his own observation:—"On the 24th and 25th of October, 1822, after a very severe gale, with thick fog, from the north-east (but veering towards its conclusion to the east, and south by east), thousands of these birds were seen to arrive upon the seashore and sand banks of the Northumbrian coast; many of them so fatigued by the length of their flight, or, perhaps, by the unfavourable shift of wind, as to be unable to rise again from the ground, and great numbers were in consequence caught and destroyed. This flight must have been immense in quantity, as its extent was traced throughout the whole length of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe (probably furnished by the pine forests of Norway and Sweden), from the circumstance of its arrival being simultaneous with that of large flights of the woodcock, fieldfare, and redwing. Although I had never before witnessed the actual arrival of the gold-crested regulus, I had long felt convinced, from the great and sudden increase of the species during the autumnal and winter months, that our indigenous birds must be augmented by a body of strangers, making these shores their winter resort." Mr. Selby further states that at the conclusion of January, 1823, a few days previous to a long-continued snow-storm, which was severely felt throughout the east of Scotland, and the north of England, the whole tribe of these birds, natives as well as strangers, entirely disappeared from the districts in question, nor did any return to breed on the approach of spring; not a single pair was seen in the usual situations in which they were accustomed to pass the summer.

In a note upon some observations by Bechstein the writer says, relative to the mode of keeping the gold-crest in confinement:—"One of these pretty birds, which I had in my room one winter, ate with pleasure, and appeared to thrive, upon a very simple paste, made of the crumb of white bread, dried in an oven and powdered: a teaspoonful of this was put in a cup, and three teaspoonfuls of milk, as hot as it could be made without boiling, poured over it." Bechstein says that the bird requires flies, ants' eggs, etc.

THE WOOD WREN.†

Gilbert White, in a letter to Pennant (August 17th, 1768), says, "I have now, past dispute, made out three distinct species of willow-wrens *(Motacillæ trochili)*, which constantly and invariably use distinct notes. In my letter of April 18th, I had told you peremptorily that I knew your willow-lark, but had not seen it then; but when I came to procure it, it proved in all respects a very *Motacilla trochilus (Sylvia trochilus)*, only that it is a size larger than the other two, and the yellow green of the whole upper part of the body is more vivid, and the belly of a clearer white. I have specimens of three distinct sorts lying before me, and can discern that there are three gradations of sizes, and that the least has black legs (chiffchaff), and the other two flesh-coloured ones. The yellowest bird is considerably the largest, and has its quill and secondary feathers tipped with white, which the others have not. This last haunts only the tops of trees in high beechen woods, and makes a sibilous, grasshopper-like noise, now and then, at short intervals, shivering a little with its wings when it sings. It is, I make no doubt now, the *Regulus non crystatus* of Ray, which he says *cantat voce stridulà locustæ*—'sings with the piping voice of a grasshopper.' Yet this great ornithologist never suspected that there were three species."

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* Wilson.

† Sylvia Sibilatrix.

In this yellow bird, exceeding the other two, we discover the wood-wren, so called from its fondness for woods. It prefers them, particularly when of old growth, to copses, thickets, or hedge-rows, taking as its prey various insects as they are on the wing. Its note has been compared to the word *tree* repeated slowly twice or thrice, and then followed by a sort of shake of the same tone, while there is a vibratory action of the wings. Rising aloft from its perch, it often utters its very peculiar and shrill note.

So concealed is its nest, that it is only discoverable with great difficulty, or by watching the parent-birds while attending to their young.

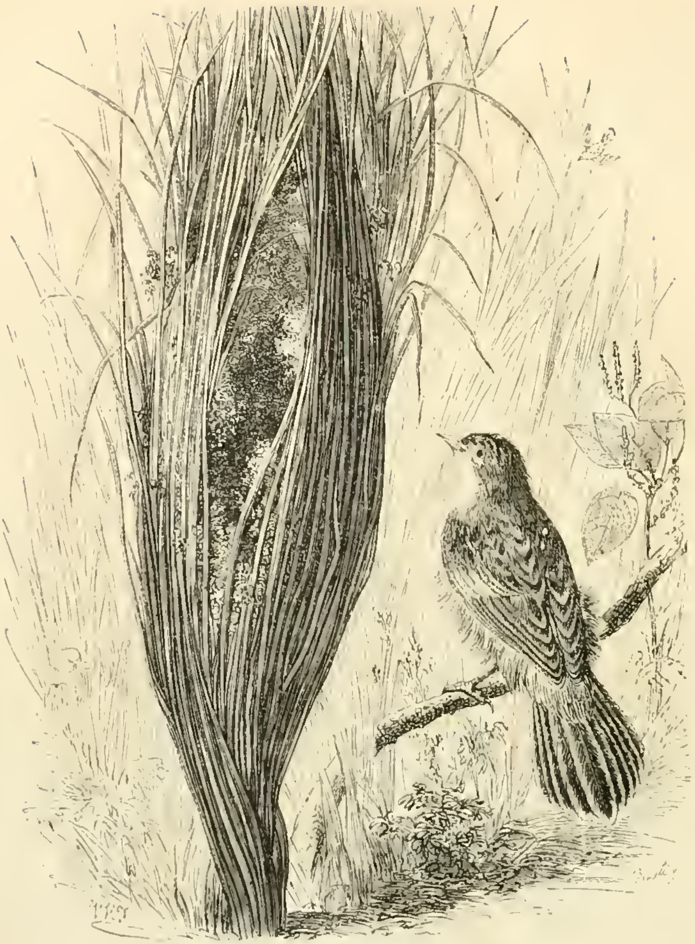
THE ARADA.

This bird was considered by Cuvier as nearly allied to the wrens. It is solitary, perches on trees, and never descends to the earth, but for the purpose of catching ants and other insects of which it also eats. Its song is peculiarly fine.

The traveller, who wanders through the immense and solitary forests which cover almost the whole of Guiana, is at first struck with the gloomy silence which prevails in the depths of these sombre retreats, crowded, however, with animals of every class and of every genus. The more he penetrates into the interior, the more general this silence becomes; animated nature appears mute, or if the monotonous uniformity should be interrupted by any sound echoing from afar, the impression produced on the mind is exceedingly disagreeable.

Sometimes the ear is struck by the horrible howlings of the alouatta; sometimes by the alarum of the chiming thrush; sometimes by the sudden strokes given by the tail of the great adder; and sometimes by the startling and reiterated crash of many falling trees, which, tumbling one over the other, break in rapid succession, causing an instantaneous clearance in the most magnificent plantations of nature. But one sound more singular than the others will occasionally arrest the attention of the wanderer through these mighty woods. Removed to the distance of many leagues from every human habitation, his ear will be suddenly saluted by a whistle like that of a bandit calling to his brothers of spoil.

Nor will this be all. This whistle will be repeated, and the traveller will believe that he is approaching one of those wild settlements formed in the depth of almost impenetrable forests, or in the distant solitude of nearly inaccessible mountains. Advancing towards the point from which the sounds appear to issue, he will find them to recede; but should he approach unperceived within sufficient distance, he will discover, to his astonishment, that this whistling is not produced by a man, but a bird, though nothing can be more perfect than the resemblance. Neither will he be long in perceiving that the same bird has a most melodious song, and that the whistler is also a most agreeable musician. Its song is less varied and less brilliant than that of the nightingale, but more grave, touching, and tender, and more resembling the mellow sounds of a soft-toned flute. It is modulated on different keys and accents, to which the seven notes of the octave, which the bird delights to repeat, serve, in some sort, as a prelude. In those warm climates, where there are several young broods in a year; the song, that exquisite expression of love, lasts longer than in cold or temperate regions.



THE FANTAIL WARBLER.*

A peculiarly interesting species of the genus *Sylvia,* to which the Wrens belong, is found in Spain, Portugal, Italy, Sardinia and Sicily; it is the Fantail Warbler. Plain and sober is the plumage of this bird; it is of a dead leaf colour, or reddish yellow above, each feather being dashed in the middle with blackish brown, so as to present the appearance of a multitude of longitudinal spots, except on the lower portion of the back, which is plain, as is also the whole of the under surface, which is of a reddish white. The tail is short, graduated, and of a blackish brown, each feather having a deep black spot near the end. The total length of this species is scarcely four inches.

The nest of this bird presents a most beautiful example of instinctive skill. It is placed in a tuft of tall grass, and elevated from the ground. With singular neatness, a number of the blades of grass are drawn together and interlaced, or truly sewed with a kind of cotton thread, which is the bird's own manufacture. The blades of grass, thus secured, form an exterior case and support to a long and barrel-shaped nest, open at the top, and consisting of a flocculent cotton-like material, secured by threads to the blades and stalks which environ it so closely, that nothing can be more effectually concealed.

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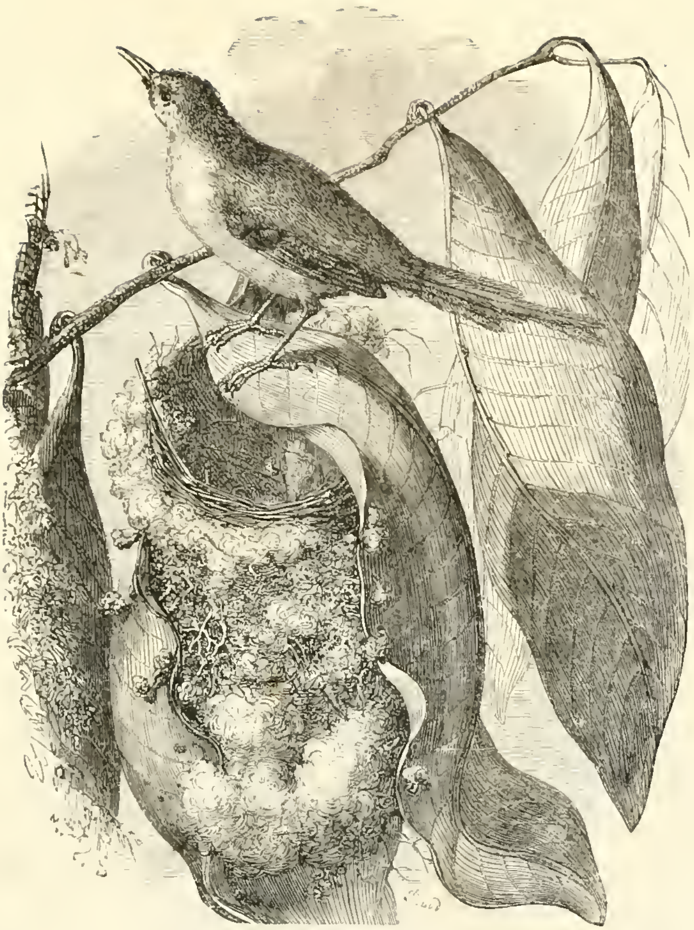
* Silvia Cisticola.



THE TAILOR BIRD.*

This minute species, measuring only three inches and a half long, is a native of Hindostan, Ceylon, and other parts of the East. Its general plumage is pale olive: the chin and throat yellow; the under parts dusky white; its weight about ninety grains.

Living in countries where snakes and monkeys are formidable enemies to the feathered tribes, this little bird selects a leaf at the extremity of a pendant twig for its cradle. If this leaf be large enough, it draws the edges together, so as to form a pouch, the end of which is so arranged as to assist in supporting the nest within. But if the leaf be too small, the bird adds to it another growing by, and sometimes a dead one, sewing this to the other, that it may form a convenient receptacle for its nest. This is composed of down, intermingled with fibres and a few feathers. Thus the young are provided with a snug and secure abode, though it rocks to and fro in the breeze. Many have examined this curious product with lively interest, but there are very few who can say with Forbes: "Often have I watched the progress of an industrious pair of Tailor Birds, from their first choice of a plant, until the completion of the nest, and the enlargement of the young."

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* Sylvia Sutoria.

It appears, however, that the tailor bird is not the only one which fabricates this kind of nest. Latham states that in Lady Clive's collection of drawings, there is a somewhat similar bird, called *Merops Minimus*, which adopts the same method. This bird, like the one with which it is naturally associated, is also small; and it is an interesting fact that such inconsiderable members of the feathered race should be gifted with so remarkable an instinct. Not only is the nest so curiously fabricated, all that the young require, but its position is so chosen that they are secure from the enemies to which they are peculiarly exposed. Yet, be it observed, this is only one example of the adaptation of the abode to the tenant which may be observed throughout the region of animated nature. In no part of it do we discover a creature whose instinct leads to the preparation of an uncongenial or insecure abode. The law under which it acts is a perfect law. That which reason would do were it possessed, is done, and the completeness of the product in every respect may well excite our wonder, and call forth our high admiration.

THE SEDGE WARBLER.*

The Sedge Warbler arrives in England about the middle of April,and silently, but in considerable numbers, takes possession of the sedgy and reedy banks of streams and pools, of osier holts, and of shrubs and bushes on the edges of marshes and moist places. It does not inhabit the very high grounds, but it appears throughout the range of England, and partially, though, perhaps, only as a straggler, in the southern parts of Scotland.

The weight of this species is about three drams, and its length five inches and a half. The crown of the head and all the upper parts are of a yellowish brown; the back, the sides of the neck, and upper tail-coverts are plain; the rest obscurely marked with dusky. Over the eye is a whitish stroke; all the under parts, from the chin to the under tail-coverts, are of a yellowish white. The tail, when spread, has a roundish shape.

The Sedge Warbler has a variety of notes, which it delivers in a hurried manner, and which partakes of that of the skylark and the swallow, as well as the chatter of the house sparrow. It is not a loud songster, but it is a very constant one; and though it sings best in the morning and towards night, it may be heard at most times of the day, and not unfrequently during the night. It sings in the throat, and gives a kind of guttural twist to all it utters. It sings from within the reeds or the bush, from the top of it, or when it is leaping from one bush to another. It is frequently by the sides of rivers and watery places, where sedge and reeds grow, amongst which it makes a nest composed of a little moss intermixed with dried stalks, lined with dried grass, and occasionally fastened with a few hairs. Sometimes it is fastened between two or three reeds; other nests are found in a tuft of rushes on the ground, or very near it, fastened round the bottom of them; while others may be discovered in a low bush. The mode of building, however, somewhat depends on the locality. If among reeds, the nest is united to two or three of these; if in a holt, where the young osiers do not afford sufficient forks, it is on the side of some stool that stands above the flooding of the place; if in a bush, it is placed in the centre; and if the only cover for the bird be rushes, the nest is placed in the centre of a tuft. The eggs are five or six in number, of a light-brown colour, mottled with darker shades of the same.

The similitude in colour, size, manners, and habits of this bird to the Reed Warbler, has sometimes led to their being confounded. That bird, however, will be found not to possess the broad white streak over the eye which this has, nor any of the feathers on the back and wing-coverts dusky. The nest and eggs are also essentially different.

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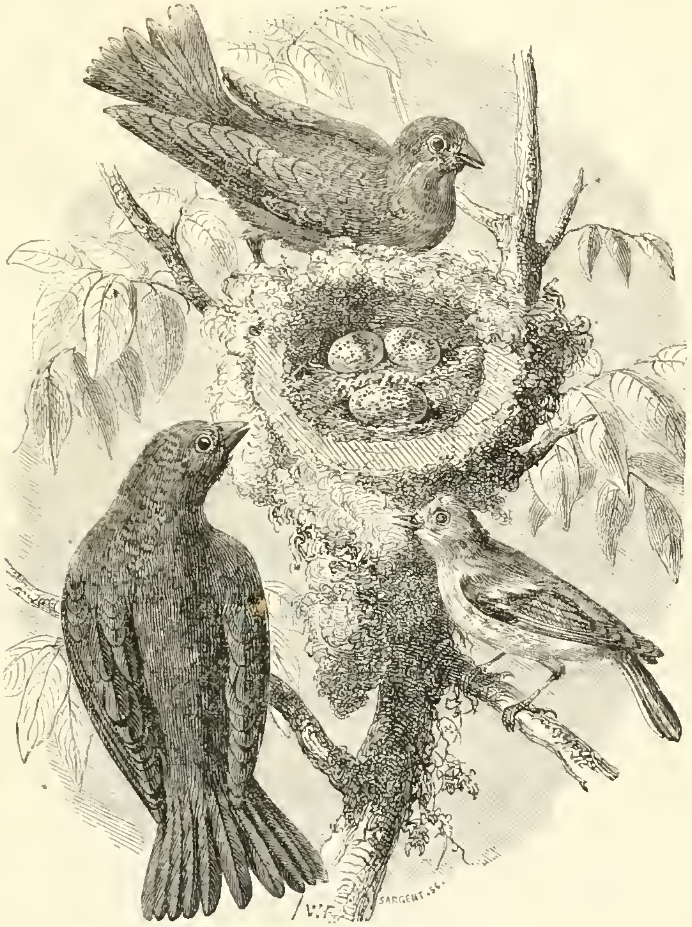
* Curruca Salicaria

A delightful volume might be written on the wonders of birds' nests; the exquisite structure of some of them, and their adaptation to comfort and concealment. In these snug receptacles the eggs are deposited and hatched. Then the parent-birds forget their own safety and wants, in protecting and providing for their helpless nestlings. So ardent is the love that struggles within them that the timid at once become brave; for only let the bird of prey, the cat, the dog, and, in some cases, even man approach that cozy abode, and the foe is attacked and followed with angry cries. Nor does it cease until the little ones can sport gaily on the wing, and amply provide for their own wants.



THE EMBERIZA PECORIS.

But what if there is no instinct of nest-building? Then the bird takes possession of one it cannot make. Such is the course of the *Emberiza pecoris.* This bird lives in flocks, near cattle. The most remarkable trait in its habits is, that it deposits its eggs in strange nests, like the cuckoo, with which we are so well acquainted. The nest of which it is represented as taking possession of, is that of the *Sylvia æstiva.* The head of the *Emberiza pecoris* is of a violet-black; the neck is of a gray-brown. The female bird will be observed above, the male beneath. The species, as yet, has been found only in America.

THE WAGTAILS.*

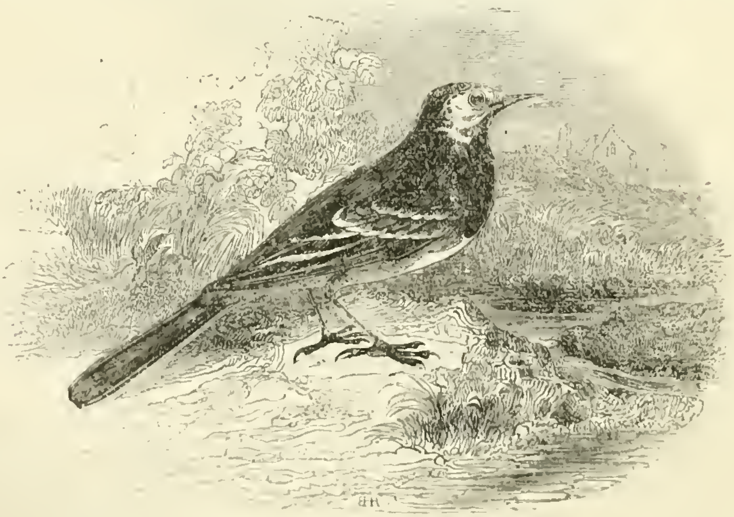
The name of these birds is derived from the remarkable, rapid, and almost incessant motion of their tails. Many birds flirt the tail upwards and downwards, but perhaps none do it so constantly as the Wagtails. They accompany the elevation by a jerking spread, which relaxes when it is depressed, so that it appears to have two simultaneous motions.

The Wagtails frequent the margins of rivers, especially clear streams and pools in retired places, and form their nests under projecting stones, or in holes near the banks. They feed chiefly on aquatic insects and worms.

The head of these birds is small and pointed, the body slender, but firm at the shoulders and tapering backwards; the tail very long, and the wings rather short. The bill is slender, awl-shaped, and has a ridge or keel on the upper part, and margins to the edges of both mandibles at the middle. The tarsi are long and strong, as is also the hinder toe, the claw upon which is considerably produced.

The Wagtails run with great rapidity, and do not hop or require the aid of their pinions in running. They can run on the surface of very soft ground without sinking, and over slippery pebbles by the brooks without any unsteadiness. And when it is necessary for them to change from running to flying, they can easily take wing from either of those surfaces.

The legs of these birds are placed behind the centre of gravity of their bodies, as is the case in all birds which run rapidly, in consequence of which they would have some difficulty, in recovering themselves by mere muscular exertion when they bring their bills to the ground, as they must frequently do in picking up their food. But as Mudie remarks, "the tarsi are long in proportion to the size of the birds; but the neck and bill, instead of being so long as to enable the latter to reach the ground while



THE PIED WAGTAIL, MALE.†

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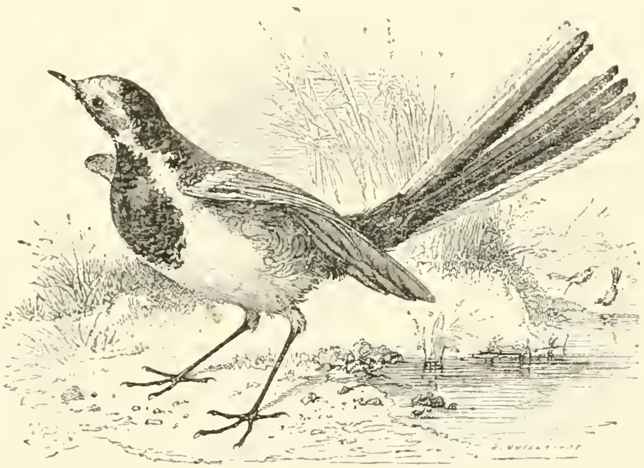
* Motacillæ.

† Motacilla Alba.

the axis of the body is horizontal, so that the shoulders must *dip* much when the bill is brought to a level with the feet. A bird so formed would be very apt to tumble forwards if it had not some means of working a counterpoise, and that counterpoise is the tail. When that is expanded and struck forward against the air, it acts in nearly the same manner as a wing, and pulls the body of the bird backwards, so that the head is raised with comparatively little effort. All birds that have the same length of tarsi in proportion to that of the neck and bill, have a similar action of the tail; but as that structure, and also the habit of picking up food on a level with the feet, is more remarkable in the wagtails than in any other British birds, the motion of the tail is more powerful in them, and the tail is also longer in proportion. But the habit may be seen in very many birds, both in enabling them to raise the head, and to retain it in an erect position. The magpie is a familiar instance, and so is the peacock—which would tumble backwards if he were to raise the body in the same manner when the tail is down as he does when it is erected and spread."



THE PIED WAGTAIL, FEMALE.

THE GRAY WAGTAIL.*

This is a beautiful species of the wagtails. These birds are found throughout Europe; but in the greatest numbers in mountainous and wooded parts, where the brooks flow over beds of pebbles. They are birds of passage.

THE YELLOW WAGTAIL.†

When wild, this species, better known than the preceding, is found throughout the plains of Europe, running about the pastures among the sheep and cattle. They assemble in September, and depart for warmer countries in large flights, uttering the cry, "*sipp, sipp!*" in a clear tone. Its nest, made of stubble, and lined with wool, is placed at the water-side, or in a deserted molehill, and sometimes, like the larks, in the grass or corn.

* Motacilla Boarula.—Linn.

† Motacilla Flava.—Linn.

TRIBE III.—CONIROSTRES.

In this tribe are embraced those birds which are distinguished by a beak of considerable length, and, as the name intimates, of a more or less conical form. And it is worthy of remark, that the more decidedly conical the configuration of this organ, the more exclusively do hard seeds and grains constitute the diet of the bird in its adult state. The common sparrow, for example, is a bird that lives on barley, oats, peas, and other farinaceous matter; but in this, as in most cases, the unfledged young are chiefly fed on caterpillars and insects, as well as grain softened in the crops of their parents. Other forms of the beaks of birds denote a preparation for a different kind of nutriment.

Family the First—Fringillidæ, or the Finches.—Here are arranged an immense multitude of small birds, the tenants of the groves and hedgerows, while many join their clear strains to the chorus of the wilds and moorlands. We shall give some specimens of each of the varieties.

THE LARKS.*

THE SHORE LARK.†

The shore lark is one of the most beautiful of the genus. It properly inhabits the north as well of Europe, as of America, as far as Virginia; but in the winter it appears in Germany, where it may be seen by the road-side picking for its food the undigested grain in horse-dung. It perches like the wood-lark. It is caught in the southern parts of Thuringia, with lime-twigs or nets, at its return in March, when there has happened to be a heavy fall of snow.

The appearance of this bird is in some respects peculiar, in having certain long black feathers which extend, by equal distances, beyond each other above the eyebrow: these are longer, more pointed, and of a different texture to the rest around them, and the bird has the power of erecting them so as to appear as if horned. The head of this bird is slightly crested, and the forehead, throat, sides of the neck, and line over the eye, are of a delicate straw, or Naples yellow, elegantly relieved by a bar of black; the back and wings are drab coloured, mingled with reddish, each feather of the former having a streak of dusky black down the centre; the tail is black and forked; and the breast is of a dusky vinous tinge.‡

"It is," says Wilson, "one of our winter birds of passage, arriving from the north in the fall, usually staying with us the whole winter, frequenting sandy plains and open downs; and is numerous in the southern states, as far as Georgia, during that season. They fly high in loose scattered flocks, and, at these times, have a single cry, almost exactly like the sky-lark of Britain. They are very numerous in many tracts of New Jersey, and they are frequently brought to the Philadelphia market. They are then generally very fat, and are considered excellent eating. Their food seems to consist of small round compressed black seeds, buckwheat, oats, &c., with a large proportion of gravel. On the flat commons within the boundaries of Philadelphia flocks of them are regularly seen during the whole winter. In the stomach of these I have found, in numerous instances, quantities of the eggs or larvæ of certain insects mixed with a kind of slimy earth. About the middle of March they generally disappear on their route to the north. Forster informs us that they visit the environs of Albany Fort in the beginning of May, but go further north to breed, and that they feed on grass-seeds and buds of the birch, and run into small holes, keeping close to the ground. This same species appears also to be found in Poland, Russia, and Siberia, in winter; from whence they also retire further north on the approach of spring, except in the north-east parts and near the high mountains."

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* Alauda.—Linn. † Alauda Alpestris.—Linn. ‡ Wilson.

THE MEADOW LARK.*

Although this well-known American bird cannot be brought into successful comparison with the sky-lark of Europe, as regards its powers of song, yet in richness of plumage, as well as in sweetness of voice, so far as its few notes extend, we are assured that it is superior. By some naturalists this bird has been classed with the starlings on account of its being unpossessed of the long straight bird-claw by which many of this tribe are distinguished, but in all the important characteristics which mark its place in the present order of birds, its position is clearly indicated.

This species has a very extensive range. Wilson mentions that he has seen them in Upper Canada, and in each of the States, from New Hampshire to New Orleans; and it is also affirmed that they are equally abundant in East Florida. They frequent pasture fields and meadows, where they most readily procure the seeds and insects on which they feed. In South Carolina and Georgia they swarm among the rice plantations, running about the yards and outhouses as if quite domesticated.

At the termination of the building season these birds collect in flocks. Their flight is laborious and steady, renewing the action of the wings alternately; and when they alight on trees or bushes, they prefer the tops of the highest branches, from which they send forth a long, clear, and somewhat melancholy note, which in sweetness and tenderness is not surpassed by any of our numerous warblers. This is sometimes followed by a kind of low, rapid chattering, the particular call of the female; and then the clear, plaintive strain is repeated as before. They afford tolerably good amusement to the sportsman, being easily shot when on the wing; and as they frequently squat among the long grass, and then arise within gunshot, the opportunity of shooting them is easily obtained. The nest is formed in a tuft of grass, and is composed of dry grass, leaving an arched entrance level with the ground. The eggs are white in colour, and sometimes five in number, but more generally they do not exceed four. Their food consists of caterpillars, grub worms, beetles, and grass seed, with which they take a good deal of gravel.†

THE CRESTED LARK.‡

This bird has eight or ten long-pointed blackish feathers rising on the head, and forming a beautiful perpendicular crest. When wild, it is only in autumn and winter that the crested larks appear in Saxony in small or large flights beside the high-roads, on dunghills, near barns and stables, and among sparrows and yellow-hammers. They are not natives of Britain, but are found all over Europe, from Sweden to Italy. In summer, they frequent the thickets and bushes of the plains, fields, and meadows, or they inhabit the hollows of ditches, paths in woods, and elevated villages.

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* Alauda Magna.

† Wilson.

‡ Alauda Cristata.—Linn.

THE SKY-LARK.*

The Sky-lark is a handsome bird about seven inches long, of a gravelly colour, having a pointed conical beak, and long toes spreading out from one point, the hinder one being provided with an uncommonly long claw. Its food consists chiefly of grain and seeds, but it feeds its young exclusively with insects and caterpillars.

Graham says:

> "Thou, simple bird, dwellest in a home
> The humblest."

And truly is it so, for the destination of the bird is to a life on the ground, where it builds in any little recess it can find, such as that between two clods, where it forms its nest of dry grass and herbs. It has generally four eggs at a time, but it will breed twice and even thrice in a season.

The nest exposes the young to many accidents, which the instinct of the mother is ever anxious to repair. When alarmed, however, it is said she will even remove her eggs or her young to a new and safer situation. A young hen-bird was brought to Buffon, in the month of May, which was not able to feed without assistance. She was hardly fledged, when he received a nest of three or four unfledged sky-larks. She took a strong liking to the new comers, which were scarcely younger than herself. She tended them night and day, cherished them beneath her wings, and fed them with her bill. Nothing could interrupt her tender offices. If the young ones were taken from her, she flew to them as soon as liberated, and would not attempt to effect her own escape, which she might have done a hundred times. Her affection grew upon her: she neglected food and drink: she now required the same support as her adopted offspring, and expired at last, consumed with maternal anxiety. None of the young ones survived, so essential were her cares, which were equally tender and judicious.

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* Alauda Arvensis.

Shakspeare styles the lark the "herald of the morn," and that in strict conformity with nature, as the bird rises in the air and begins its carol before day. He has been heard as early as two o'clock on a spring morning. To this one of our poets thus alludes:—

"God of the mountains, whom to praise
At early morn the lark doth rise,
Soaring and singing as he spreads
His airy pinions to the skies.

Sweet bird! I feel thy gladsome notes
Floating aloft in balmy air,
As thou a messenger wert sent
From distant clime to soften care.

Waking the song of other birds,
The aerial symphonies to swell,
Till universal nature lends
Her sweetest notes Heaven's praise to tell."*

Another poet describes as follows the character of the song:—

"With fluttering start, in silence from her nest
The sky-lark breaks: then steadier, upwards soars,
And with melodious trill her prelude pours
To earth, in hues of full-flushed summer drest;
Now, poised on moveless wing, she seems to rest;
Careless what bird, beneath the airy height,
May cross her path with horizontal flight,
The measured lay she breathes: then, like a guest
Singing to other spheres, is lost in light:
Till, fondly lured, she turns her faithful breast
Downward through fields of blue. The warbling strain
Near and more near she swells: then hushed again,
Falls like a shadow from the sunny dome,
And chants her three wild notes to welcome home."†

Nor is the following description less accurate:—

"Fraught with a transient frozen show'r,
If a cloud should haply low'r,
Sailing o'er the landscape dark,
Mute on a sudden is the lark;
But when gleams the sun again
O'er the pearl besprinkled plain,
And from behind his wat'ry veil
Looks through the thin descending hail;
She mounts, and less'ning to the sight,
Salutes the blythe return of light;
And high her tuneful track pursues
'Mid the dim rainbow's scattered hues."

Mudie, whose conclusions on this subject are as just as his observations, remarks, "The accordance of the song with the mode of the ascent and descent is worthy of notice. When the volutions of the spiral are narrow, and the bird changes its attitude rapidly in proportion to the whole quantity of flight, the song is partially suppressed.

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* S. S. S.

† Mrs. J. Conder.

and it swells as the spiral widens, and sinks as it contracts; so that though the notes may be the same, it is only when the lark sings poised at the same height that it sings in a uniform key. It gives a swelling song as it ascends, and a sinking one as it comes down; and even if it take but one wheel in the air, as that wheel always includes an ascent or a descent, it varies the pitch of the song.

"The song of the lark, besides being a most accessible and delightful subject for common observation, is a very curious one for the physiologist. Every one in the least conversant with the structure of birds, must be aware that, with them, the organs of intonation and modulation are *inward,* deriving little assistance from the tongue, and none, or next to none, from the mandibles of the bill. The windpipe is the musical organ, and is often very curiously formed. Birds require that organ less for breathing than other animals having a windpipe and lungs, because of the air-cells and breathing tubes with which all parts of their bodies (even their bones) are furnished. But those diffused breathing organs must act with least freedom when the bird is making the greatest efforts in motion—that is, when ascending or descending; and in proportion as they cease to act, the trachea is the more required for the purposes of breathing. The sky-lark thus converts the atmosphere into a musical instrument of many stops, and so produces an exceedingly wild and varied song—a song which is, perhaps, not equal, either in power or compass, in the single stave, to that of many of the warblers, but one which is more varied in the whole succession. All birds that sing ascending or descending have similar power, but the sky-lark has it in a degree superior to every other."

Well might Wordsworth say :—

"Ethereal minstrel! pilgrim of the sky!
  Dost thou despise the earth, where cares abound;
Or, while thy wings aspire, are heart and eye
  Both with thy nest, upon the dewy ground?
Thy nest which thou canst drop into at will,
Those quivering wings composed, and music still!

To the last point of vision, and beyond,
  Mount, daring warbler! that love-prompted strain,
('Twixt thee and thine a never-failing bond,)
  Thrills not the less the bosom of the plain;
Yet might'st thou seem, proud privilege! to sing,
All independent of the leafy spring.

Leave to the nightingale the shady wood;—
  A privacy of glorious light is thine,
Whence thou dost pour upon the world a flood
  Of harmony, with rapture more divine:
Type of the wise, who soar—but never roam,
True to the kindred points of heaven and home."

The lark has great abilities for learning. The young readily imitate the notes of all the birds in the same room with them, and the old sometimes succeed also. But this is not general; for among birds, as among men, memories vary in power. There are some which in confinement will begin to sing as early as December, and continue till they moult; while others, less lively, delay till the month of March, and cease to sing in the month of August. In its wild state, the lark begins to sing in the first fine days of spring, the season of pairing, and ceases at the end of July; this, however, is not without exception, as some individuals continue till the end of September. In the country it very seldom sings when on the ground; in the room it often does, and with ease, and it becomes so tame as to come and eat from the table or the hand.

THE BUNTINGS.

The Buntings are a numerous race. They have a bill which is very strong, short, conical, and compressed laterally, but without any tooth or notch; the upper mandible is narrowish, turned inward at the edges, and with a bony knot at the palatal end. It is thus well fitted for breaking the rinds or shells of seeds, and ejecting them without losing any of the kernel, which, from the way the mandibles close, drops into the bil rather than out of it. The wings are of moderate length; the tail spreads towards the extremity, and is either forked or lobed; and the feet, with three toes before and one behind, are all free.

Of the genus *Plectrophanes*, the most familiar and interesting example is,

THE SNOW BUNTING.*

It is found in the northern parts of Great Britain, and is called in Scotland the "snow flake." These birds appear there in large flocks, at the commencement of frost, and are feared by many as the harbingers of hard weather.

This bird is the size of a lark, six inches and a-half in length, of which the tail measures two and two-thirds. The female is rather smaller. They nestle in holes of rocks, and produce five white eggs, with dusky spots. They are found in all the northern latitudes, as high as navigators have penetrated; nor is it yet apparent by what means they obtain food in these inhospitable regions. The higher the degree of latitude in which they are found, the whiter, as it appears, becomes their plumage.

THE ORTOLAN BUNTING.†

This bird is found, in its wild state, principally in the southern and temperate parts of Europe, and is not scarce in some of the provinces of Germany. The ortolans may often be seen, in various directions, on their passage; for though they may not remain during the summer in a district, yet they make some stay, never passing over a great space of country at a time. Their route is so exact and regular, that when one has been observed in a particular spot, especially if in spring, it is sure to be found there the following year at the same time. Ortolans fly rather in families than in flocks.

When these birds first arrive in France, they are far from fat; but artifice soon makes them fit for the table. Many of them are enclosed in a dark chamber, in which is placed a lanthorn, surrounded plentifully with oats and millet. The darkness seems to have the effect of directing the whole attention of the birds to their favourite food, thus placed in their view; and it is said they will thus die of suffocation from their own fat, if left entirely to themselves.

THE FOOLISH BUNTING.‡

When wild, this species, which loves solitude, and prefers mountainous districts, inhabits the south of France, Italy, and the south of Austria. In some winters they quit those countries and proceed even to the middle of Germany, where they are found in March and April, in elevated situations.

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* Plectrophanes Nivalis.—Meyer.

† Emberiza Ortulana.—Linn.

‡ Emberiza Cia.—Linn.

THE YELLOW BUNTING.*

Clare thus gives us one of his exquisite little pictures :—

"Just by the wooden bridge a bird flew up,
Seen by the cow-boy as he scrambled down
To reach the misty dewberry. Let us stoop
And seek its nest. The brook we need not dread;
'Tis scarcely deep enough a bee to drown,
As it sings harmless o'er its pebbly bed.
—Ay, here it is! Stuck close beside the bank,
Beneath the bunch of grass that spindles rank
Its husk-seeds tall and high : 'tis rudely planned
Of bleached stubbles and the withered fare
That last year's harvest left upon the land,
Lined thinly with the horse's sable hair.
Five eggs, pen-scribbled o'er with ink their shells,
Resembling writing scrawls, which Fancy reads
As Nature's poesy and pastoral spells;
They are the yellow-hammer's; and she dwells,
Most poet-like, 'mid brooks and flowery weeds."

The name employed by the poet, of yellow-hammer, is one frequently applied to the yellow bunting. Apart from its song, it is one of the most interesting of the small birds of Britain, and which its people can study both summer and winter. It frequents the hedges, bushes, and copses, but not the thick forests. The female sits so closely, that she will suffer herself to be taken rather than expose her eggs to the cold; the male at times feeds her; and when she flies out for a little, he takes her place during her absence, so that after the incubation begins, the eggs are never longer exposed than the time that the birds require to shift their places. The unfledged young are attended to with similar assiduity.

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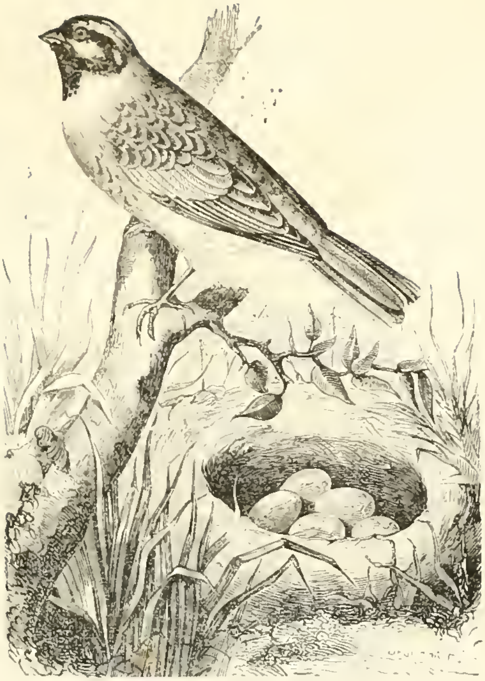
* Emberiza Citrinella.



THE CIRL BUNTING.*

This bird is found only in the warmer counties on the British Channel, and it is confined to the southern parts of the continent. This might be inferred even from its plumage, which is more soft and loose, and less fitted for contending with the winds, than the other buntings, and much more so than that of the species which breeds in the distant north.

In the male bird the bill is bluish above, and pale on the under part. The irides are hazel, inclining to brown. The throat, and a streak across the eye, are greenish-black, with a streak of bright yellow above, and a paler one below it. The gorget is pale yellow. The sides of the neck and lower part of the breast are pale olive-green, with a soft tinge of gray passing into other tints on the belly and sides. The female has the top of the head dull olive-green; the flanks are streaked with brown, where they are mottled with reddish-orange in the male, and the colours are generally less bright and pure.

In winter, the cirl buntings associate with the yellow buntings; and they resemble them in their manners, their notes, and partially in their appearance, only they are rather smaller, their song is softer, and their colours more varied. The voice, too, is not so loud or harsh, and the chirp of the female is particularly soft.

The indefatigable and discriminating Montague first ascertained the cirl bunting to be a British bird in the winter of 1800, and soon after its nest was found by the same ornithologist. It builds rather earlier than the yellow bunting, or, at least, than that bird does in the middle latitudes of Britain. The nest is generally built in bushes, and the eggs are about the same in number, but rather smaller, without the yellowish tinge in the ground, and with the lines, which are mixed with the drops, more waved.

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* Emberiza Cirlus.

THE SPARROWS.[*]

The Sparrows have the conical bill of the graminivorous birds, but they have it more decidedly notched than almost any of the others. This agrees with their habit of being more insectivorous birds, particularly during the breeding season.

THE HOUSE SPARROW.[†]

Barry Cornwall thus accurately describes and pathetically pleads for this well-known bird :—

" Touch not the little sparrow who doth build
His home so near us. He doth follow us
From spot to spot, amidst the turbulent town,
And ne'er deserts us. To all other birds
The woods suffice, the rivers, the sweet fields,
And nature in her aspect mute and fair ;
But he doth herd with man. Blithe servant ! live,
Feed and grow cheerful ! On my window's ledge
I'll leave thee every morning some fit food,
In payment of thy service. Doth he serve ?
Aye serves and teaches. His familiar voice,
His look of love, his sure fidelity,
Bid us be gentle with so small a friend :
And much we learn from acts of gentleness.
Doth he not teach ?—Ay, and doth serve us too,
Who clears our homes from many a toilsome thing,
Insect or reptile : and when we do mark
With what nice care he builds his nest, and guards
His offspring from all harm, and how he goes,
A perseverign, bold adventurer,
'Midst hostile tribes, twenty times as big as he,
Skill, perseverance, courage, parent's love,—
In our own lives, perhaps, when need doth ask,
To imitate the little household bird.
Untiring follower ! what doth chain thee here ;
What bonds 'tween thee and man ? Thy food the same
As theirs who wing the woods,—thy voice as wild,
Thy wants, thy power, the same ; we nothing do
To serve thee, and few love thee ; yet thou hang'st
About our dwellings, like some humble friend,
Whom custom and kind thoughts do link to us,
And no neglect can banish.
So, long live
The household sparrow ! may he thrive for ever !
For ever twitter forth his morning song,
A brief, but sweet domestic melody !
Long may he live ! and he who aims to kill
Our small companion, let him think how he
Would feel, if great men spurned him from their hearths,
Or tyrant doom'd him, who had done no wrong,
To pains or sudden death. Then let him think,
And he will spare this little trustful bird ;

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[*] Pyrgita.

[†] Pyrgita Domestica.

And his one act of clemency will teach
His heart a lesson that shall widen it;
For nothing makes so bright the soul, as when
Pity doth temper wisdom."

"We have scarcely," says Mr. Knapp, "another bird, the appetite of which is so accommodating in all respects, as that of the house-sparrow. It is, I believe, the only bird that is a voluntary inhabitant with man, lives in his society, and is his constant attendant, following him wherever he fixes his residence. It becomes immediately an inhabitant of the new farm-house, in a lonely place or recent inclosure, or even in an island; will accompany him in the crowded city, and build and feed there in content, unmindful of noise, the smoke of the furnace, or the steam-engine, where even the swallow and the martin, that flock around him in the country, are scared by the tumult and leave him; but the sparrow, though begrimed with soot, does not forsake him; feeds on his food, rice, potatoes, and almost any other extraneous substance he may find in the street; looks to him for his support, and is maintained almost entirely by the industry and providence of man. It is not known in a solitary and independent state."

Of the care and affection of birds for their young, Mr. Graves, in his "British Ornithology," gives us a pleasing instance. It occurred in the case of a pair of sparrows that had built their nest in a wall contiguous to his residence.

Having noticed that the parent birds continued to bring food to the nest for some months after the brood had left it, he had the curiosity to place a ladder against the wall for the purpose of ascertaining the cause, when to his surprise he found a full-grown bird in the nest, which had got its leg completely entangled in some thread which had formed part of the abode, in such a manner as to entirely prevent its flight with the rest. Wishing to see how long the industry of the old birds would be extended in behalf of their imprisoned offspring, he left the bird and the nest in the state he found it in, and observed that the parent birds continued to supply food during the whole of the autumn and some part of the winter months; but the weather setting in very severe soon after Christmas, fearing the severity of the weather would occasion the death of the imprisoned bird, he disengaged its leg, and in a day or two it accompanied the old ones in search of food; but they continued to feed it till the month of March, and during the whole time they all nestled in the same spot.

THE TREE SPARROW.*

This is a smaller and more tender bird than the house-sparrow. It is also more light and lively, and perches with the axis of the body more erect. Its nest resembles that of the other, except it has often withered grass instead of straw. It contains about five eggs, and is usually found in holes of decayed trees.

In their wild state, these birds are found not only throughout Europe, but also in the north of Asia and America. In Germany and England the tree-sparrow is not so common as the house-sparrow, for in some provinces it is never seen. It frequents gardens, orchards, and fields abounding with trees and hedges. In September large flights are seen feeding on the ripe fields of barley and oats.

It is only kept in a cage in countries where it is very rare. Its song is less short and monotonous than that of the house-sparrow, but it is weak, and "where it might be sweet," says Bechstein, "it is lost among other songs of the room."

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* Pyrgita Montana

THE FINCHES.*

The Finches live more on vegetable food than the sparrows; their bills are straighter in their outlines, more conical, and they have a sharper point. They are, therefore, more of field birds than the sparrows, and roam over a greater extent of country. They are also birds of much finer plumage in their tints and markings.

Several of the Finches are called *linnets*, and in Scotland, *lintiss*; which words have the same meaning, and simply mean that the birds eat the seeds of lint or flax (*linum*), which, as well as the seeds of hemp (*cannabina*) and all the smaller mucilaginous and oily seeds, the whole tribe greatly enjoy.

THE SNOW FINCH.†

The head of this bird is of a bluish ash-colour, the back is slaty-brown; the wing-coverts and secondaries, except the two next the body, white. The quill-feathers are black, as also are the two middle feathers, the rest being white tipped with black; the whole of the under surface is pure white. The beak is black during summer, but becomes yellowish in winter.

The habits of this bird greatly resemble those of the snow bunting; and, like it, is a native of the dreary regions of the north, migrating southwards during the severities of winter. In Europe it is found in the higher range of the Alps and Pyrenees, on the very verge of the line of perpetual snow, whence it descends to the lower range of hills only when compelled by the season; but its chief resorts are within the arctic circle.

In America its migrations are made on an extensive scale. Wilson says, "They extend from the arctic circle, and probably beyond it, to the shores of the Gulf of Mexico, spreading over the whole breadth of the United States from the Atlantic Ocean to Louisiana; how much farther I am unable to say.

"About the 20th of October they make their first appearance in those parts of Pennsylvania east of the Alleghany mountains. At first they are most generally seen on the borders of woods, among the fallen and decayed leaves, in loose flocks of thirty or forty together, always taking to the trees when disturbed. As the winter sets in colder, they approach near the farm-houses and villages; and on the appearance of what is usually called falling weather, assemble in larger flocks, and seem doubly diligent in searching for food: this increased activity is generally the sure prognostic of a storm.

"When deep snow covers the ground, they become almost half domesticated; they collect about the barns, stables, and other out-houses, spread over the ground, and even round the steps of the door, not only in the country and villages, but in the midst of our large cities, crowding round the threshold early in the morning, gleaning up the crumbs, and appearing very lively and familiar. They have also recourse at this severe season, when the face of the earth is shut up from them, to the seeds of many kinds of weeds that still rise above the snow in corners of fields and low-sheltered situations." They may now be seen associated with several species of their congeners, all engaged in the same assiduous search for food. The nest of these birds is said to be placed on the ground among the grass, several being clustered together within a little distance of each other.

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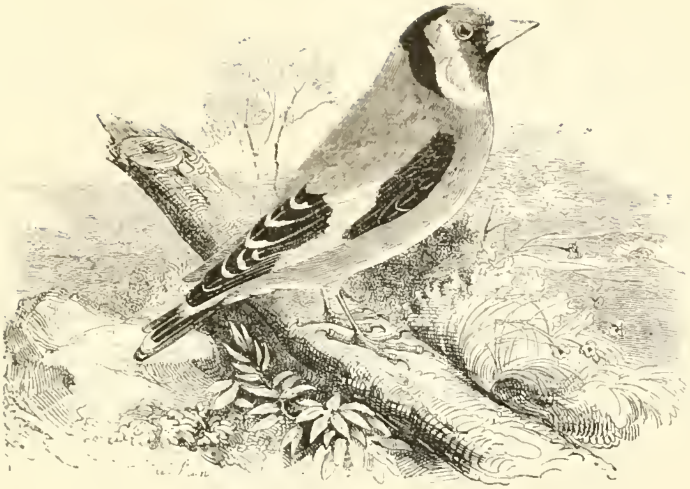
* Fringilla.

† Fringilla Nivalis.—Linn.



THE GOLDFINCH.*

"Goldfinch, pride of woodland glade,
In thy jet and gold arrayed;
Gentle bird, that lov'st to feed
On the thistle's downy seed;
Freely frolic, lightly sing,
In the sunbeam spread thy wing!
Spread thy plumage, trim and gay,
Glittering in the noontide ray!
As upon the thorn-tree's stem
Perch'd thou sipp'st the dewy gem.
Fickle bird, for ever roving,
Endless changes ever loving;
Now in orchards gaily sporting,
Now to flowery fields resorting;
Chasing now the thistle's down,
By the gentle zephyr blown:
Lightly on thou wing'st thy way,
Always happy, always gay."

The colours of the female goldfinch resemble those of the male, both in their distribution and their markings, only they are not so brilliant in their tints, and the red on the forehead and the chin is sometimes clouded with a few black spots. The young have the head brownish. There is not much seasonal change in the plumage, only it is less bright in winter, and the full beauty is not acquired till the birds are in song.

Grahame is correct in his rural sketch:—

"The goldfinch weaves with willow down inlaid,
And Cannach tufts, his wonderful abode;
Sometimes suspended at the timber end,
Of plane-tree spray among the broad-leaved shoots,
The tiny hammock swings to every gale;
Sometimes in closest thickets 'tis concealed,
Sometimes in hedge luxuriant, where the brier,
The bramble, and the plum-tree branch;
Warp through the thorn, surmounted by the flowers
Of climbing vetch and honeysuckle wild."

---

* Fringilla Carduelis.

Many can say with Hurdis,—

> "I love to see the goldfinch twit and twit,
> And pick the groundsel's feathered seeds;
> And then, in bower of apple-blossom perch'd,
> Trim his gay suit, and pay us with a song."

But this is one of the favourite cage-birds, as well as one of great beauty, in a state of nature. The goldfinch is easily tamed, hardy, lively, capable of being taught many little tricks, and, when properly attended to, almost continually in song. It will live longer in confinement than almost any other of the little birds. For ourselves, however, we have no delight in imprisoning these beautiful and delightful choristers, and many a one, unhappily, might have adopted the words of Cowper:—

> "Time was when I was free as air,
> The thistle's downy seed my fare,
> My drink the morning dew;
> I perched at will on every spray,
> My form genteel, my plumage gay,
> My strains for ever new.
>
> But gaudy plumage, sprightly strain,
> And form genteel were all in vain,
> And of a transient date;
> For caught and caged and starved to death,
> In dying sighs my little breath
> Soon passed the wiry grate.
>
> Thanks, gentle swain, for all my woes,
> And thanks for this effectual close
> And cure of every ill!
> More cruelty could none express;
> And I, if you had shown me less,
> Had been your prisoner still."

THE GREEN FINCH.*

The Green Finch, or green linnet, as it is sometimes called, differs from the other finches in the form of its bill, in which it more resembles the sparrows, but its habits are more like those of the other finches. Wordsworth has well portrayed the character of this bird and the scenes it loves to frequent:—

> "Beneath these fruit-tree boughs, that shed
> Their snow-white blossoms on my head,
> With brightest sunshine round me spread
> Of Spring's unclouded weather;
> In this sequester'd nook how sweet
> To sit upon my orchard seat!
> And birds and flowers once more to greet,
> My last year's friends together.
>
> One have I marked, the happiest guest
> In all this covert of the bless'd;
> Hail to thee, far above the rest
> In joy of voice and pinion,
> Thou, linnet! in thy green array,
> Presiding spirit here to-day,
> Dost lead the revels of the May,
> And this is thy dominion.

---

* Fringilla Chloris.

While birds and butterflies and flowers
Make all one band of paramours,
Thou, ranging up and down the bowers,
Art sole in thy employment;
A life, a presence like the air,
Scattering thy blessings without care,
Too bless'd with any one to pair,
Thyself thy own enjoyment.

Upon yon tuft of hazel trees,
That twinkle to the gusty breeze,
Behold him perch'd in ecstasies,
Yet seeming still to hover;
There! where the flutter of his wings
Upon his back and body flings
Shadows and sunny glimmerings,
That cover him all over.

My sight he dazzles, half deceives,
A bird so like the dancing leaves,
Then flits, and from the cottage eaves
Pours forth his song in gushes;
As if by that exulting strain,
He mocked and treated with disdain
The voiceless form he chose to feign
While fluttering in the bushes."

In summer, the green finches frequent the hedges, bushes, and copses, in the neighbourhood of cultivated ground, and are often found nestling in gardens, especially where they have the shelter of ivy or of close hedges. The note of the male is mild and subdued, but it can hardly be called a song; though in confinement he may be taught to sing to a certain extent; but then, as in the free state, the birds are more recommended to notice by the gentleness of their manners than their notes.

The nest of these birds is placed in a thick bush, composed of vegetable fibres, moss, and wool, with a lining of hair and feathers; the eggs are four or five in number, of a very pale greenish white, with light reddish spots near the thick ends.

As the green finches have their nesting time in the finest part of the season, and their nesting places in those localities where both food and building materials are found in abundance, matters go on more smoothly with them than with many other birds. The pair are very attentive to the young and to each other; and when the incubation begins, the male takes his turn. The principal food of the grown-up birds is small seeds, especially those which abound in fixed oil.

THE GREATER REDPOLE.*

The name of this bird is not very accurate; for it is not the *pole* but the *breast* that is red. These birds are subject to considerable changes of plumage, not only in the sexes, but in the male birds at different seasons, which have, of course, caused no little confusion respecting them. In the breeding plumage, for example, the male bird is bright carmine red on the breast, and pale brownish red on the flanks, in which state it is also called the *rose* linnet. But in the winter, the red nearly disappears, and the breast is reddish brown, mottled with reddish white, and the flanks marked with large brown streaks.

These birds hop on the ground; they whirl about in masses, and perch on trees, and though they have no song in the winter, they all chirp at the same time. When the weather begins to get warm, their short but pleasant song commences, before they retire to the breeding grounds, or the plumage of the male changes; and though their song is not so full then as after they have betaken themselves to the wilds, the crowds that are in song, on the same tree, make a lively concert.

The singing of the males, while yet in the brown plumage, and the fact that it is difficult to have caged birds in any other, appear to be the chief causes of the confusion that there is about the species. If the males are taken young, they moult into the winter plumage, and do not change it; if they are taken in the flocking time, they retain the brown plumage in their moults; and if they are captured in the summer, which, from the wildness of their haunts and the wild habits of the birds, is not a very common case, they lose the red on the first moult, and never regain it afterwards.

THE LESSER REDPOLE.†

This species is very generally diffused throughout Europe, but the northern parts seem to be its native regions. It is not uncommon in the southern counties of England during the winter months; at this season it is gregarious, and numbers are frequently taken about London and other parts by birdcatchers.

"It is a bird," says Bechstein, "more pleasing to the eye than the ear; its warble being feeble and weak, and consisting of a continued chinking note. It is impossible to see without pleasure the affection which seems to exist between the male and female of this species, who fondle and caress each other without ceasing. They will do the same even with the goldfinch, linnet, and canary, with any of which it will readily pair."

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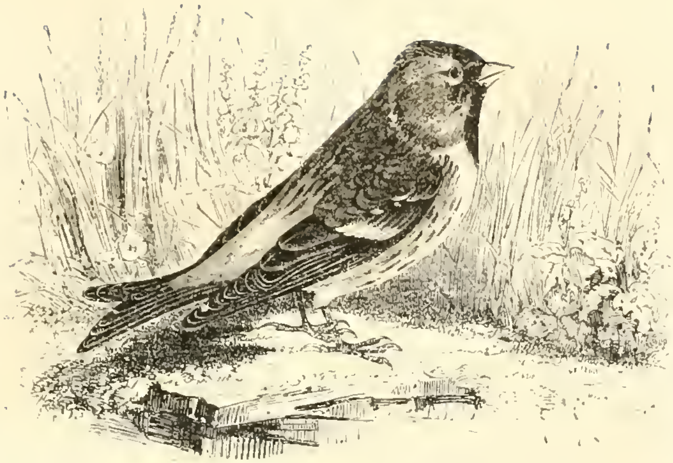
* Fringilla Cannabina.

† Fringilla Flavirostris.—Linn.



THE MEALY REDPOLE.*

Mr. Gould says:—"Whether this species is truly a native of Europe, or whether those which occur in our island are arrivals from the northern portions of the American continent, is a matter of doubt; true it is, that the specimens brought home by Dr. Richardson, which furnished the descriptions given in the "Fauna-Boreali Americana," are strictly identical with the bird before us."

THE MOUNTAIN LINNET.†

This is a stout-made bird, which is said to nestle in the pine-trees. While in Britain it keeps more to the open fields than the trees and copses. The mountain finches or linnets are rather arctic birds, and are described as subject to considerable variations of colour. The length is about six inches and a half, the extent of the wings ten and a half, and the weight rather more than an ounce.

Mr. Macgillivray states that "it is plentiful in the Hebrides, and in winter frequents the corn-yards in large flocks, clinging to the stacks of oats, and picking out the seeds. Its flight is rapid and undulated, and it whirls over the fields previous to alighting, uttering a soft twitter at intervals. When disturbed it betakes itself to tall trees, or to a distant field; but is not shy, and may, therefore, be easily approached when feeding. In spring it forsakes its winter haunts, and disperses over the hilly tracks, where it forms its nest on the ground, among short heath, or on the grassy slopes of craggy spots. It is neatly constructed, being composed externally of fine dry grass, fragments of heath, and a little moss; internally of fibrous roots, wool, and hair. The eggs are bluish white, marked towards the larger end with light brown and purplish red, sometimes with a few blackish dots."

The mountain linnet nestles in the heather, though not so much in the thick dark extent of it as the grouse, but rather in the tufts which are interspersed with coarse grass, near the marshy and boggy places. Over these it flies low, and upon gloomy and drizzling days rather dismally uttering its single and complaining note—*twite*, unanswered by the voice of any living creature; and, excepting the owl, is perhaps the only land bird which makes the place of its habitation feel more desolate and sad. "As one goes mountain-ward," says Mudie, "the lark, the linnet, and other bush-birds, and the lesser red-pole, give an air of liveliness, either by the blitheness of their songs, or the activity of their motions; but when one comes to the cold unbroken moor, where no vegetable rises higher than the knee, the mountain linnet inspires a very different feeling."

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* Linota Canescens.

† Fringilla Montana.

THE CANARY BIRD.

This pleasing bird had its origin in the pleasant climate and delightful valleys of the Canary islands, and is now spread throughout Europe, part of Asia, and as far as Siberia. The beauty of its form, its plumage, and its song, united with its great docility, soon gained it admittance into the most magnificent abodes, where every one delights in rearing and preserving it, whilst the fairest hands are often eager to present it with the most delicate food.

It was brought into our climate as early as the beginning of the sixteenth century. The arrival of the canary in Europe is thus described:—A vessel, which besides its merchandise, was bringing a number of these birds to Leghorn, was shipwrecked on the coast of Italy opposite the island of Elba, where these little birds, having been set at liberty, took refuge. The climate being favourable, they increased, and would certainly have become naturalised, had not the wish to possess them occasioned their being caught in such numbers, that at last they were extirpated from their new country. From this cause Italy was the first European country where the canary was reared. At first, their education was difficult, as the proper manner of treating them was unknown; and what tended to render them scarce was, that only the male birds were brought over; there were no females.

Those which introduce into their melody some passages of the nightingale's song are the most esteemed of all canaries; they are called Tyrolean canaries, because they are considered natives of the Tyrol, where they breed many of these birds. The second are the English canaries, which imitate the song of the woodlark. But in Thuringia, the preference is generally given to those which, instead of a succession of noisy bursts, know how, with a silvery sonorous voice, to descend regularly through all the tones of the octave, introducing from time to time the sound of a trumpet. There are some males which, especially in the pairing season, sing with so much strength and ardour, that they burst the delicate vessels of the lungs, and die suddenly.

Bechstein thus points out the best rules for obtaining and preserving good singers: "The most essential is to choose from among the young that which promises a fine tone, and to seclude it from all other birds, that it may learn and remember nothing bad. The same precaution is necessary during the first and second moulting; for being likely to re-learn (if I may say so) its song, it would introduce into it with equal ease foreign parts. It must be observed whether the bird likes to sing alone, or in company with others, for there are some which appear to have such whims, liking to hear only themselves, and which pout for whole years if they are not humoured on this point. Others sing faintly and display their powers only when they can try their strength against a rival. It is very important to distribute regularly to singing birds the simple allowance of fresh food which is intended for the day. By this means they will sing every day equally, because they will eat uniformly, and not pick the best one day, and be obliged to put up with the refuse the next.

"About two spoonfuls of dry food is sufficient for the daily nourishment of a canary; what he leaves may be thrown to the birds which are free in the room, and will serve as a variety to those which have only the universal paste to satisfy their appetite."

THE CHAFFINCH.*

This delightful songster of spring, famed for the sprightliness of its warbling—this favourite bird of most of our bird-fanciers—is very generally known. The passion for this bird is carried to such an extent in Thuringia, and those which sing well are sought for with so much activity, that scarcely a single chaffinch that warbles tolerably can be found throughout the province. As soon as one arrives from a neighbouring country, whose notes appear good, all the bird-catchers seek it, and do not give up the pursuit until they have taken it. This is the reason why the chaffinches in this province are such indifferent songsters: the young ones have only bad masters in the old ones, and they, in their turn, cannot prove better.

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* Fringilla Cœlebs.

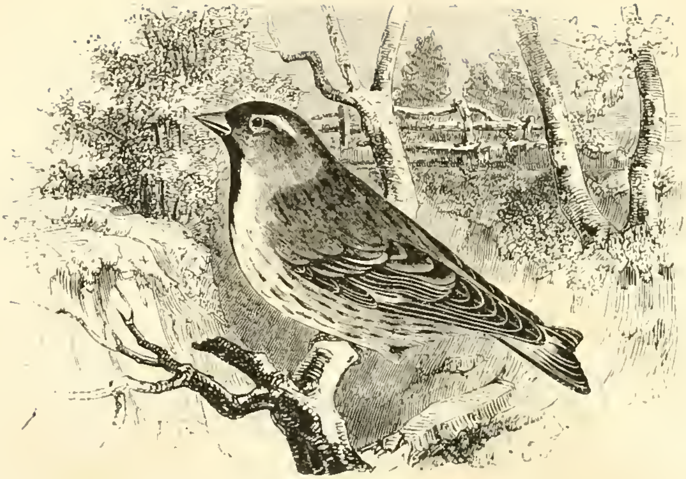
This bird is six inches and one-third in length, of which the tail measures two and three-quarters. The beak is conical, pointed, and white in winter; but as soon as spring, the season of pairing and song, arrives, and till the time of moulting, it is of a deep blue; and one may know by this whether it has sung or not. The iris is chesnut-brown; the legs, nine lines high, are dusky; the claws are very sharp, and grow so fast in a cage, that it is necessary to cut them every six weeks, if it is not wished to see the poor bird some day caught by them, and perish miserably unless rescued. The forehead is black, the top of the head and nape of the neck are grayish-blue; in very old males deep blue, and then thick downy hairs are perceived; the back and rump are a linnet-green, the upper part chesnut with an olive tint; the cheeks, throat, breast, and all the under part of the body, in fact, are of a reddish chesnut-brown, which becomes white towards the extremity; the thighs gray; the quill-feathers black-edged, with white on the outer side; the lesser wing-coverts white, the greater black, with the tips white, which form two white lines on the top of the wings; the tail-feathers black, with a gray tint on the two middle ones, and a large wedge-shaped white spot on the two outer; the third is sometimes marked with a small spot; all are slightly green on the edges. After moulting, at the beginning of winter, the colours become lighter; the front of the head is only deep brown; the top and the nape of the neck a changeable grayish and olive-brown; the red-brown of the breast is brighter: this is also the plumage of the young ones in the second year, particularly if of the last brood; they are called gray-heads by bird-catchers, who can easily distinguish, in the spring, the young from the old males, and very much prefer them, because, if properly caught, they may be taught to improve their song when confined in the house; whilst the others never learn, or change very little, at least rarely, the song they have acquired in their wild state.

The female is very different, being smaller, while the head, neck, and upper part of the back are grayish-brown, and all the under part of the body is a dusky white, rather reddish-gray on the breast; and the beak, grayish-brown in spring, becomes grayish-white in winter.

There are some remarkable varieties of this species; one quite white; another with a white collar; a third streaked, or spotted. There is no distinction between the wood chaffinches and those of the gardens and orchards, as has been alleged.

The nest of the chaffinch is one of the most beautiful of birds' nests, and formed in the most skilful manner. It is the shape of a half globe flattened on the upper part, and so perfectly rounded that it has the appearance of having been turned on a lathe. Cobwebs and wool fasten it to the branch, bits of moss with small twigs entwined form the ground-work; the lining is composed of feathers, thistle-down, the hair of horses and other animals, whilst the outer covering is formed of the different lichens that grow on the tree in which it is placed, the whole firmly united and well cemented. This outer finish is no doubt intended to deceive an enemy's eye; in fact, it is very difficult, even with great attention, to distinguish the nest from the bark of the branch on which it is fixed.

Wild chaffinches, on their return in spring, do not delay to record; those in the house soon learn, but they are obliged to exercise themselves for nearly two months before they can execute their song to perfection. The singing season does not generally extend beyond June, but young chaffinches, brought up in a room, prolong it to October, and sometimes later.



THE SISKIN.*

The Siskin is larger than the goldfinch, and in appearance not so firm and compact. Its prominent colours are black, bright yellow, sulphur-yellow, and a peculiar sort of green, approaching to sage-green, but so peculiar as to give rise to the name of "siskin-green." The bill, though hard and conical, is not, by any means, so powerful as that of the goldfinch, and the bird is altogether of softer manners, and more resembles the canary, except in colour and in being smaller.

The wooded parts of the continent appear to be its principal haunts; but it is rather confined to the middle latitudes, than extended either to the extreme north or south; and when it visits England, its haunts agree with such a locality, as it perches on shrubs and trees, and feeds on the seeds and buds of these, rather than on the seeds of herbaceous plants. In its wild state it is very common in Germany, where it remains all the year, but in winter it wanders about in search of food, and most frequents the parts well planted with alders. In the house, whether in a cage or not, it soon becomes very familiar.

When wild its food varies according to the season; in summer it eats in the woods the seeds of the pine and fir; in autumn, of hops, thistles, burdock; in winter of the alder and tho buds of trees.

In tho house its food is poppy-seed and a little hempseed bruised. It is a complete glutton, and, though so small, eats more than the chaffinch; it is at the seed-drawer from morning till night, constantly eating, and driving off all its companions. It does not drink less, and requires abundance of fresh water; yet it bathes but little, only plunging the beak in the water, and thus scattering it over its feathers, but it is very assiduous in arranging them; it may be called a fop always engaged with finery.

The siskin rarely builds its nest among the alders, but generally in the pine forests, placing it at the extremity of the highest branches, and fixing it there with cobwebs, the threads of insects, and lichens. The outer part is well constructed of small twigs, and the lining is formed of finely divided roots. It has two broods in the year, each of five or six eggs, of a light gray, strongly spotted with purplish brown, particularly at the large end. The young males become finer each year till the fourth.

Their plumage and song are both attractive, though with the latter several tones are mingled, that somewhat resemble the noise made by a stocking-loom. This makes them great favourites with stocking-weavers. They imitate tolerably, however, the song of other birds.

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* Vidua Erythorynchus.—Swain

THE WEAVER BIRDS.*

THE BROAD-SHAFTED WHIDAH FINCH.†

The Weavers are placed in a separate genus by M. Vieillot, and in the same family with the orioles. Their bill is robust, advancing on the forehead in the form of an acute angle; it is convex above, a little compressed at the sides, entire, nearly straight, sharp, and sometimes a little gibbous. The lower mandible has its edges bent inwards; the tongue is cartilaginous and fringed at the point; the nostrils are oblong and covered with a membrane.

Most of these birds are found in India or Africa. Their generic name is derived from the wonderful art with which they construct their nests, interlacing them with blades of grass; in which talent they resemble some other birds, the inhabitants of far distant lands.

Of Cuvier's genus, *vidua*, the whidah-bird is one of the most elegant species. In organisation and in manners they are true linnets. In captivity, which they endure without much appearance of constraint, they are lively and active, jumping from perch to perch, and alternately raising and depressing their long tails with much vivacity. They are usually fed upon grain, with the occasional addition of green herbs; and are fond of bathing in the water which is placed in their cage. Twice a year they are subject to changes of plumage, which alter the appearance, of the male especially, to such an extent, that it would be difficult to recognise in him the same bird. The long feathers, which are his peculiar attribute, fall off towards the end of autumn, and, with the other changes that take place in his plumage, leave him little to distinguish him, during the winter months, from his plainer mate. But in spring he recovers his long feathers, his more brilliant hues, and his sharp, but agreeable and varied note; the change being usually completed by the beginning of June. It is said that they live for twelve or fifteen years.

Of all the genera composing the family of Weavers, the Broad-shafted Whidah Finch is the most striking. It is composed of very small birds, mostly not larger than canaries. The males, during the breeding season, are decorated with exceedingly long tail-feathers, often four times the length of the bird itself, and which, however ornamental, must rather impede the action of flight. Little or nothing is known of the habits and manners of the whidah finches in a state of nature, but they have always been among the most favourite cage-birds; and although not very frequent in the aviaries and houses of this country, they are common in those of France and other parts of the continent.

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* Ploceus.

† Vidua Paradisea.

Numbers of these, and the other pretty finches of the same country, are imported into France by the Senegal traders, and sold to the *marchands des oiseaux* of Paris. A resident in that city states that he was not a little surprised to find between a hundred and fifty and two hundred of these inhabitants of the torrid zone flying and sporting about in a small, dark, dirty room, transformed into a sort of aviary, in one of the meanest houses on the Quai Voltaire, two rooms only of which were tenanted by a *marchand des oiseaux*, his birds living in one, and himself and his family living in the other. He adds: "We have even been assured that these ingenious people, who are really practical ornithologists, contrive to breed several of these African natives in these dingy quarters."

THE RED-BILLED WHIDAH.*

This bird is less in size than the *V. paradisea;* the bill is also thicker and broader at the top. The four middle tail-feathers are greatly elongated. The ordinary tail-feathers, four on each side, are slightly rounded. In the adult the general colour is deep glossy blue-black.

THE YELLOW-BACKED WHIDAH.†

The tail of this bird is remarkably broad, fan-shaped, and flat; and as the under tail-feathers are very long, it is probable that the tail is often elevated, or, at least, spread out. The general colour of the plumage is a full and intense black, glossy, but without any reflexions; the feathers of the head and neck are very closely set, although not short, and have an inclination upwards.

THE PHILIPPINE GROSBEAK.‡

The Philippine Grosbeak is one of the best known of the genus; its general colour is dull yellow, blotched with brown; the throat is black. It is said to be very common in Dukhun; and there are four wells, overhung by a tree, where their nests are now seen pendent. The nest is woven in the shape of an inverted flask, the entrance being at the extremity of a prolonged neck, through which is the passage to a snug little chamber in the round body of the nest itself. These birds live in small communities, and are very noisy in their labours. They associate so readily with the common sparrow, that at the season of the grass seeds, Colonel Sykes, in firing into a flock of sparrows on the grass-plots in his own ground, killed as many weaver-birds as sparrows.

The peculiar position of the nests of the weaver-bird protects them, to a great extent, from their enemies the monkeys, but more especially from the deadly attacks of the snake tribes, which abound in these regions. Dr. Smith, in his "Zoology of South Africa," expresses his decided opinion, that the fear of injury from small quadrupeds and snakes operates upon the birds of that country in their selection of the trees on which they shall build. The influence which snakes produce upon these birds, when they come in contact with them, is very singular. The boom-slange, which, however, is not considered poisonous, is one of its most common foes; and it is generally found upon trees, to which it resorts for the purpose of catching birds, upon which it delights to feed. The presence of a specimen in a tree is generally soon discovered by the birds of the neighbourhood, who collect around it, and fly to and fro, uttering the most fearful sounds, until some one, more terror-stricken than the rest, actually skims along so as to touch its lips, and, as a fly will destroy itself in the flame of a candle, becomes, almost without resistance, a prey to its enemy. During these proceedings, the snake may usually be observed with its head raised about ten or twelve inches above the branch round which its body and tail are entwined, with its mouth open, and its neck inflated, as if anxiously endeavouring to increase the terror which it would almost appear it was aware would, sooner or later, bring within its grasp one of the feathered group.

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* Vidua Chrysonotus.—Swain.

† Fringilla Spinus.

‡ Ploceus Philippensis.—Cuv.

THE BOTTLE-NESTED SPARROW.

Forbes describes another interesting species, under the name of Baya, or Bottle-nested sparrow, "which," he says, "is remarkable for its pendent nest, brilliant plumage, and uncommon sagacity. These birds are found in most parts of Hindostan; in shape they resemble the sparrow, as also in the brown feathers of the back and wings; the head and breast are of a bright yellow, and, in the rays of a tropical sun, have a splendid appearance when flying by thousands in the same grove. They make a chirping noise, but have no song; they associate in large communities, and cover extensive clumps of palmyras, acacias, and date trees with their nests. These are formed in a very ingenious manner by long grass woven together in the shape of a bottle, and suspended by the other end to the extremity of a flexible branch, the more effectually to secure the eggs and young brood from serpents, monkeys, squirrels, and birds of prey. These nests contain several apartments appropriated to different purposes: in one the hen performs the office of incubation; another, consisting of a little thatched roof, and covering a perch, without a bottom, is occupied by the male, who, with his chirping note, cheers the female during her maternal duties.

THE ABYSSINIAN GROSBEAK.

This bird has been represented as a variety of the Philippine grosbeak, but it more probably constitutes a distinct genus. It is a native, as its name denotes, of Abyssinia, and gives to its nest a different form from that of the bird just mentioned, and displays rather more industry in its precautions for sheltering its offspring from the humidity of the weather and the voracity of its enemies. It rolls its nest in a spiral form, not unlike the shell of the nautilus, suspends it to the extremity of some little branch over a placid stream, and fixes the entrance in the lower part; but the aperture is always on the eastern side, in opposition to the direction of the rain.

THE LOXIA BENGALENSIS.*

This species inhabits India. The bird constructs its nest of vegetable fibres, which it interlaces in such a manner as to form a sort of purse, of which the engraving gives an exact representation. It suspends its nest on the higher branches of trees overhanging rivers; and the entrance is observable at the lower end. The first year the nest is a simple purse; but in the following one, the bird attaches to this a second, and proceeds annually with a similar addition to the curious fabric.

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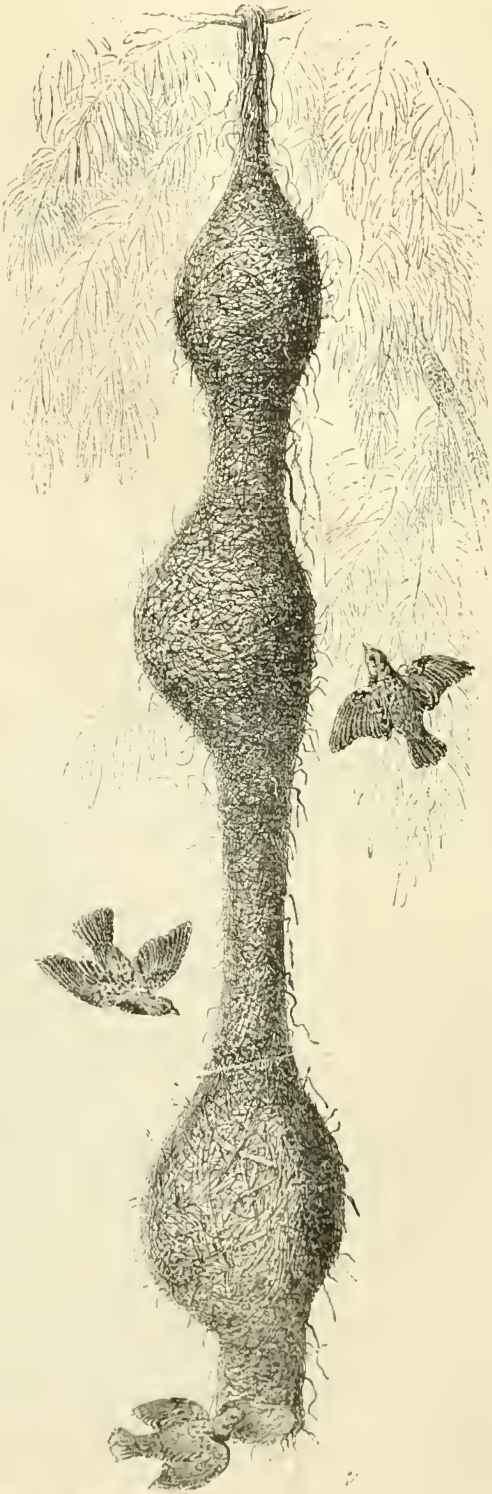
* Cocothraustes Chrysocephala.—Vieil.



THE LOXIA BENGALENSES.

THE SOCIABLE GROSBEAK OR WEAVER-BIRD.*

The Sociable Grosbeak, of Southern Africa, excels any of its feathered race in the extent, if not in the beauty and extent, of its habitation. Usually selecting a large and lofty tree, often of the mimosa or sensitive plant species, they find under its ample top and strong wide-spreading branches a good shelter and support for their erection. Having chosen the site, the framework is constructed by the combined efforts of the fraternity at large, who will derive from it a common advantage. The nest is firmly interwoven with the branches of the tree on which it rests, and often a large part of a principal branch is included within its substance. This part of the work being completed, each pair proceeds to the construction of its own nest, which, like the roof, consists of grass.

The best description we have of these birds is that by Le Vaillant, in his Travels in Africa. His narrative is as follows:—" I observed, on the way, a tree with an enormous nest of these birds, to which I have given the appellation of *republicans;* and as soon as I arrived at my camp, I despatched a few men with a waggon to bring it to me, that I might open the hive and examine its structure in its minutest parts. When it arrived I cut it to pieces with a hatchet, and saw that the chief portion of the structure consisted of a mass of Bushman's grass, without any mixture, but so compact and firmly basketted together as to be impenetrable to the rain. This is the commencement of the structure;

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* Ploceus Socius.—Loxia Socia of Latham.

and each bird builds its particular nest under this canopy, the upper surface remaining void; without, however, being useless; for as it has a projecting rim and is a little inclined, it serves to let the rain water run off, and preserves each little dwelling from the rain. Figure to yourself a huge, irregular, sloping roof, all the eaves of which are completely covered with nests crowded one against another, and you will have a tolerably accurate idea of these singular edifices. Each individual nest is three or four inches in diameter, which is sufficient for the bird. But as they are all in contact with one another around the eaves, they appear to the eye to form but one building, and are distinguishable from each other only by a little external aperture which serves as an entrance to the nest; and even this is sometimes common to three different nests, one of which is situated at the bottom and the other two at the sides. According to Patterson, the number of cells increasing in proportion to the increase of inhabitants, the old ones become streets of communication formed by line and level. No doubt, as the republic increases, the cells must be multiplied also; but it is easy to imagine that, as the augmentation can take place only at the surface, the new buildings will necessarily cover the old ones, which must therefore be abandoned. Should these even, contrary to all probability, be able to subsist, it may be presumed that the depths of their situation, by preventing any circulation and renewal of the air, would render them so extremely hot as to be uninhabitable. But while they would thus become useless, they would remain what they were before, real nests, and change neither into streets nor sleeping rooms.

"The largest nest that I examined was one of the most considerable I had any where seen in the course of my journey, and contained 320 inhabited cells, which, supposing a male and a female to each, would form a society of 640 individuals. Such a calculation, however, would not be exact." It appears that in every flock the females are more numerous by far than the males; many cells, therefore, would contain only a single bird. Still, the aggregate would be considerable; and, when undisturbed, they might go on to increase, the structure increasing in a like ratio, till a storm, sweeping through the wood, laid the tree and the overwhelming edifice it sustained in one common ruin.

THE CAP-MORE.*

This weaver-bird is a native of Senegal, and also of the kingdoms of Congo and Cacoucongo. Like most of the birds inhabiting these burning regions of Africa, its livery varies according to the season. In spring, for instance, its head is covered with a sort of capouche, of a reddish brown, which, in the after season, changes to a yellow; its song is peculiar and very lively. Some of these birds, when seen in France, evinced a disposition to nestle, though unexcited by the presence of the female; they constructed nests with blades of grass or reeds, interlaced in the wires of their cage. It is probable that with care, and the production of a proper degree of warmth, they might be made to multiply, even in these climates.

THE PENSILE GROSBEAK.†

The nest of this bird is said to be inferior to some of the fabrics already described, yet it is unquestionably a very curious fabric. The bird composes it of straw and reeds, interlaced with much dexterity, and suspends it to a flexible branch, on the edge of a rivulet; it forms a pouch in the upper part, in which the eggs are deposited, and fits to this an elongated tunnel, leading downwards, at the end of which the entrance is situated. When the second brood takes place, the bird attaches a new nest to the former, and so on successively; five or six hundred of these nests may be sometimes seen, thus suspended to a single tree. The female lays only three eggs.

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* Ploceus Textor.

† Ploceus Pensilis.

THE PLOCEUS CRISTATUS.

The *Malimbic Tanager*, as this bird is called by Latham, inhabits Malimba, a country on the eastern coast of Africa, in the kingdom of Congo, where it was first observed by Perrein. These birds usually sojourn on trees bearing figs, which exactly resemble those of Europe, and place their nests on such of the branches as form a triangle. The nest is of a round form, with the aperture worked on the side; the exterior is composed of fine plants, arranged ingeniously, and the interior is furnished with cotton. The eggs are from three to five, of a grayish colour, and the male and female partake of the incubation. It is in the months of October and November that these birds are found in Malimba; they remain on the fig-trees only while they are laden with fruit; and when that disappears, the birds are gone, and do not return until tho following year.

THE BLACK-COLLARED FINCH.

This bird exhibits wonderful industry in the making of its nest, and great foresight in protecting its young from rain, and from the attacks of little animals. The form of its abode is pyramidal. It is always suspended above the water, and at the extremity of a little branch. The aperture is on one of the faces of the pyramid, and usually turned towards the east. The cavity of this pyramid is separated into two parts by a partition, thus forming, as it were, two chambers. The first, in which is the entrance to the nest, is a sort of vestibule, where the bird first introduces itself; then he climbs up the intermediate partition, and descends to the bottom of the second chamber, where the eggs are deposited. This species is a native of Senegal and Abyssinia.

THE YELLOW-CROWNED WEAVER.*

A native of South Africa, this bird constructs an isolated, pensile, kidney-shaped nest, about seven inches long by four and a half broad, with an opening in the sides.

THE CRIMSON-CROWNED WEAVER.†

This bird has the ears and sides of the head crimson, the chin and body beneath black, the crown red, the wings and tail blackish. It is said to be a native of Senegal.

THE YELLOW-BODIED WEAVER.‡

The last Weaver we shall mention is above dark brown; beneath it is a bright yellow; the chin is whitish; the legs are pale. "There are certain characters in this Weaver," says an eminent naturalist, "which separates it so much from any of its congeners, that we cannot for the present associate it with any of the genera contained in the circle. These characters certainly show a great departure from those which belong more or less to the others; yet, as its whole appearance is that of a *Ploceus*, we place it as the aberrant type, believing that its natural station is between *Ploceus* and *Estrelda*. It is distinguished from all others, by having the spurious quill half as long as the second, which, with the third, is graduated; so that the fourth and fifth quills are longest; the bill, moreover, is considerably compressed, and its commissure in nowise sinuated; lastly, the inner toe is shorter than the outer one. These characters are all of a *positive* nature, and with the above considerations, leads to the belief that this is the aberrant type of the circle of the weavers."

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* Ploceus Icterocephalus. † Euplectes Flammiceps. ‡ Symplectes Chrysomus.—Swain.

THE TANAGERS.*

The Tanagers live on berries, insects, and small grains; they seek their food in thickets, among brushwood, on plants and trees, many of them hopping about on all the branches, in search of insects. Most of them are remarkable for the richness and brilliancy of their colours; accordingly M. d'Azara gives them a Spanish name expressive of this attribute, *Lindo*, which, both in Italian and Spanish, means spruce, neat, elegant.

As we find it to be frequently the case in the feathered kingdom, this external beauty is not accompanied by any corresponding melody or power of voice: very few indeed of the tanagers possess agreeable notes. Their movements are rapid and abrupt, their flight lively, and their natural disposition active. They rarely descend to the earth, and when they do, instead of walking, they proceed by jumps.

Some frequent the interior of large forests, where they are attracted by certain berries of which they are extremely fond. Others usually sojourn on the borders of woods, and others on the dry grounds, where they conceal themselves in bushes and briars; others again prefer the summits of trees, and many visit rural habitations, where they frequent the gardens and the meadows. Such species love the society of their fellows, and unite in flocks more or less numerous; others live in families, some in pairs, and some even solitarily. The tanagers, stationed in the torrid zone, hatch at different seasons; but they lay a smaller number of eggs than the natives of temperate climates.

America is the country of the tanagers; and the greater number of species are found in the equinoctial part of that vast continent. The form of the bill is somewhat conical, but inflated at the sides, the edge of the upper mandible being irregular, as if slightly toothed.

THE SCARLET TANAGER.†

"Among all other birds," says Wilson, "that inhabit our woods, there is none that strikes the eye of a stranger, or even a native, with so much brilliancy as this. Seen among the green leaves, with the light falling strongly on his plumage, he really appears beautiful. If he has little melody in his notes to charm us, he has nothing in them to disgust. His manners are modest, easy, and inoffensive; he commits no depredations on the property of the husbandman, but rather benefits him by the daily destruction in spring of many noxious insects; and when winter approaches he is no plundering dependent, but seeks in a distant country for that sustenance which the severity of the season denies to his industry in this. He is a striking ornament to our rural scenery, and none of the meanest of our rural songsters. Such being the true traits of his character, we shall always with pleasure welcome this beautiful inoffensive stranger to our orchards, groves, and forests." In length the Scarlet Tanager is six inches and a half; the tail is forked.

THE TANAGRA CAYANA.

The *Tanagra Cayana*, called *Dauphinois*, by the creoles of Cayenne, is very common in that country. It inhabits open places, approaches the habitations, and lives on fruits. It destroys the bananas and gayavas in great quantities; it also carries devastation into the rice-fields in the period of their maturity. It is only, in fact, in the rice-grounds that these birds unite in any numbers; for, ordinarily, they are seen only in couples. They have no song or modulation of voice, and generally utter but a short cry.

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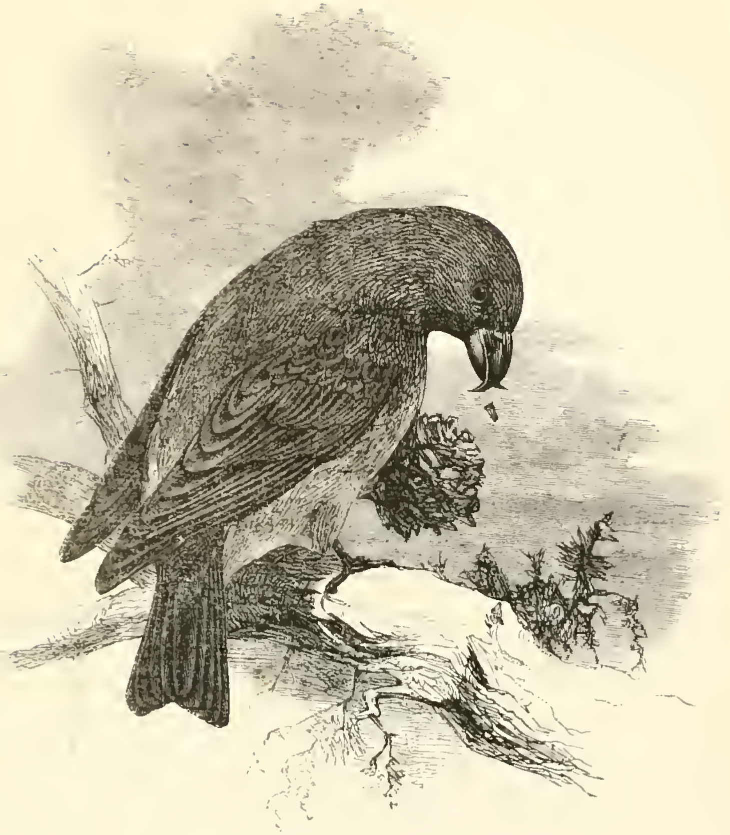
* Tanagra.

† Tanagra Tatus.



THE CROSSBILL.*

Linnæus and Latham have placed the Crossbills with the grosbeaks, but the peculiarity of the bill indicates the propriety of a separation.

They are found in the northern countries of Europe and America, and inhabit by preference the large pine forests, the fruit of which constitutes their principal food. These birds nestle in the most rigorous season of the year, and have a very variable plumage. There are three authenticated species, one of which inhabits North America.

The Common Crossbill is extended from the north of Europe as far as Greenland. Very numerous flocks of them appeared several years ago in the neighbourhood of Havre de Grace. They did a vast deal of injury to the apples, which they tore in pieces to come at the pips. The crossbill is not a distrustful bird, and will allow itself to be approached pretty closely. It may even be taken by the hand when fatigued, and it exhibits no symptoms of impatience in captivity. It may then be fed on hemp-seed, but that of the pine is its element in a state of liberty. It makes its nest in January, of moss and lichen, and fastens it to the branches with the resin of the pine, and covers it with this matter. It lays four or five whitish eggs, picked out, spotted, and striped toward the gross end with blood red.

THE BULLFINCH.

The Bullfinch is found in most parts of Europe, frequenting woods and gardens; it builds its nest either in the fork of a tree, not very high, or in a bush, generally the white-thorn. About the end of April, or in May, these birds begin the affair of nidification. The nest is composed of small branches interlaced on the outside, and the fibres of roots within. The female lays from four to six bluish-white eggs, with red or brownish spots, particularly towards the greater end. Besides the buds of trees, on which these birds feed, they take also in summer grain and berries, and, it has been said, sometimes insects. Some of them migrate, but others remain during the winter, and then approach nearer to human habitations. They live five or six years.

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* Loxia Curvirostra.

The natural note of this species is by no means interesting; but when caged, its power of acquiring distinct tunes is very surprising. It may be brought also to articulate words, and the female is equally capable of these acquirements with the male. They show also more attachment than other small birds in general, and can distinguish strangers from those who take care of them.

This species, which possesses many pleasing qualities in a confined state, is very destructive in a state of nature, by feeding on the buds of fruit-trees, especially pears, apples, and plums. They appear to associate in families of the parents and their young of the same season, an association not determined by the approach of winter, but which continues until the ensuing spring, when the young pair and breed. A woody country, in the vicinity of hills, is their favourite resort. They are usually seen on the upper branches of trees; but should a hawk or anything else alarm them, they descend rapidly into the middle of the thickest bush at hand, and remain there without uttering the slightest noise. In spring, on the contrary, when the family disperses, and the young males select their mates, they are no longer to be found on the tops of trees, but concealed in the thickest bushes, where they would escape all observation, but for the continued call they make use of to one another. The lateness in the season, compared with other birds, of the breeding time of the bullfinch is remarkable; but even this circumstance, trifling and unimportant as it may seem, of their economy is not without a substantial cause. The young are fed, in all probability, on grain, to the exclusion of insects and chrysalisis, the usual food of other young birds of this order; and if they were hatched early in the season, it is obvious that grain would neither be so plentiful nor so fit as at a later period.

The Second Family is that of the *Sturnidæ* or starlings The beak of these birds is long and conical, running to a sharp point from a stout base.

THE RED-WINGED STARLING.*

The red-winged starlings are found in immense flocks among the whole of the lower parts of Virginia, both Carolinas, Georgia, and Louisiana, particularly near the sea-coast and in the vicinity of large rice and corn-fields. The aerial evolutions of large numbers of these birds are very curious. Sometimes they appear like an enormous black cloud driving before the wind, varying its shape every moment; sometimes rising suddenly from the fields with a noise resembling thunder, while the glittering of innumerable wings of the brightest vermilion amid the black cloud they form, produces on such occasions a very splendid effect. Then, ascending like a torrent, and covering the branches of some detached grove, or clump of trees, the whole congregated multitude will commence a general concert or chorus, which may sometimes be plainly distinguished at the distance of more than two miles; and which, if heard at an interval of about a quarter of a mile, with a slight breeze to swell and soften the flow of the cadences, is said to be grand, if not sublime. The entire winter season, which, with most birds, is spent in struggling to maintain life in silent melancholy, is with the red-wings a continual carnival; for as soon as the profuse gleanings of the old rice, corn, and buckwheat fields have supplied them with food, of which there is abundance, they rise to their aerial manœuvres, or to rehearse their grand vocal entertainments.

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* Sturnus Predatorius.—Wilson.

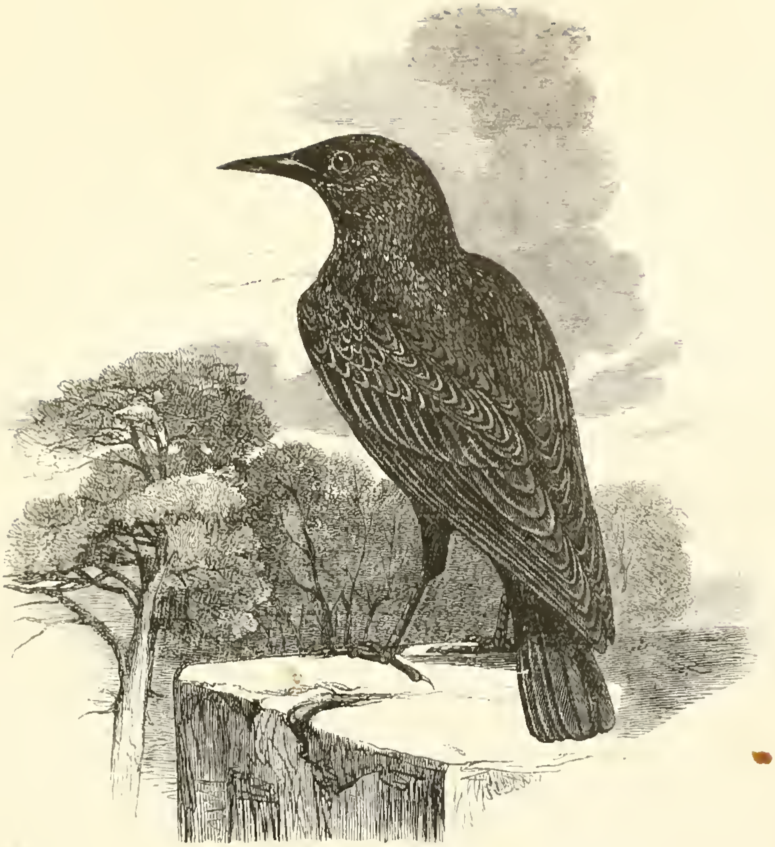
About the middle of March they begin to enter Pennsylvania. They appear in small but numerous parties, and from daybreak to eight or nine o'clock in the evening chattering to each other as they fly along, and, despite the destructive character of their visit, their presence gives cheerful promise of returning spring and beauty. They select their old haunts, preferring meadows, creeks, swamps, and ponds, till about the middle of April, when they separate into pairs, and in two or three weeks begin to build their nests. A favourite spot for this purpose is a thicket of alder bushes, a detached bush in a meadow of high grass, or a tuft of rank rushes or grass, especial regard being paid to such neighbourhoods as have swamps, meadows, or other watering-places. When the nest is built in a bush, it is generally composed outwardly of wet rushes, picked from the swamp, and long, tough grass in large quantities, the whole being lined with very fine bent. The rushes forming the exterior are generally extended to several of the adjoining twigs, round which they are repeatedly and securely twisted—an indispensable precaution, on account of the flexible nature of the bushes in which it is placed. The same precaution is observed when a tuft of grass or rushes is selected, the tops being fastened together and intertwined with the materials of which the nest is formed, with the stalks of rushes around. When placed upon the ground, less care and fewer materials are necessary. It is not uncommon to find several nests in the same thicket, within a few feet of each other.

As is the case with most other birds which build in low situations, the males exhibit the most violent apprehension on the approach of an intruder, and this is especially the case after the young are hatched. Like the lapwings of Europe, they fly to meet the invader, hovering at a slight elevation above him, and uttering loud cries of distress; and while in this position, displaying to great advantage the rich glowing scarlet of the wings, which is heightened by the jetty black of his general plumage.

But while the devastation committed by these birds is very great, the services which they render must not be overlooked. Half a truth is no more *the* truth in natural history than it is in morals; and those who utterly denounce and would entirely extirpate the red-winged starling, overlook some important considerations. For a considerable period the food of these birds consists of grubs, caterpillars, and larvæ, which, though silent and unostentatious in their movements, are yet the fatal enemies of all vegetation. For these the starling searches with great diligence, not only in the ground, but at the roots of plants, in meadows, and among buds and blossoms; and the multitudes which they destroy of these is immense. Wilson makes the computation that, supposing each bird, on an average, devours fifty of these larvæ in a day—a very moderate estimate—a single pair, in the four months during which they seek them, will consume upwards of twelve thousand. Now it is believed that not less than a million pair of these birds are distributed over the whole extent of the United States in summer, whose food, being nearly the same, would swell the amount of vermin destroyed to twelve thousand millions. But the number of young birds may be fairly estimated at double that of their parents; and, as these are constantly fed on larvæ for at least three weeks, making only the same allowance for them as for the old ones, their share would amount to four thousand two hundred millions; making a grand total of sixteen thousand two hundred millions of noxious insects destroyed in the space of four months by this single species. The ravages of such a host of the enemies of vegetation, if permitted to go forth unchecked, would soon spread famine and desolation over the most fruitful and best cultivated country on earth: and yet these data are founded on the best authenticated facts.

Towards the middle of August the young birds begin to fly in flocks, and at that age very much resemble the female, with the exception of some reddish or orange which marks the shoulders of the male. It is also frequently found that at this time the young birds chiefly associate by themselves, there being sometimes not more than two or three old males in a flock of many thousands. By the end of the second week of the following month the flocks of birds have become very numerous and formidable; and they make most destructive assaults on the soft, succulent young ears of Indian corn; and reinforced by constantly increasing hosts from all parts of the interior, they pour down on the low countries in prodigious multitudes. "Here they are seen, like vast clouds, wheeling and driving over the meadows and devoted corn-fields, darkening the air with their numbers. Then commences the work of destruction on the corn, the husks of which, though composed of numerous envelopes of closely-wrapped leaves, are soon completely or partially torn off; while from all quarters myriads continue to pour down like a tempest, blackening half an acre at a time; and if not disturbed, repeat their depredations, till little remains but the cob and the shrivelled skins of the grain: what little is left of the tender ear, being exposed to the rains and weather, is generally much injured. All the attacks and havoc made among them at this time with the gun, and by the hawks, several species of which are their constant attendants, have little effect on the remainder. When the hawks make a sweep among them, they suddenly open on all sides, but rarely in time to disappoint them of their victims; and, though repeatedly fired at, with mortal effect, they only remove from one field to an adjoining one, or to another quarter of the same enclosure. From dawn to nearly sunset, this open and daring devastation is carried on, under the eye of the proprietor; and a farmer, who has any considerable extent of corn, would require half-a-dozen men at least, with guns, to guard it; and even then, all their vigilance and activity would not prevent a good tithe from becoming the prey of the blackbirds. The Indians, who usually plant their corn in one general field, keep the whole young boys of the village all day patrolling round and among it; and each being furnished with bow and arrows, with which they are very expert, they generally contrive to destroy great numbers of them.

This scene of pillage is, however, principally confined to the low countries on the sea-board, or near the extensive flats which border the larger rivers. By the end of September, too, the corn has acquired its hard shelly coat, and the seeds of the reeds or wild oats, with many other plants that abound along the river shores, being now ripe, and in great abundance, they present a new and more extensive field for these marauding multitudes. The reeds, also, being often in almost inapproachable morasses, supply them with convenient roosting-places, and thither they repair every evening. In some places, where the reeds become dry, advantage is taken of this circumstance to destroy these birds, by a party secretly approaching the place under cover of a dark night, and setting fire to the reeds in several places at once, which, being soon enveloped in a general flame, the uproar among these birds becomes universal; and by the light of the conflagration they are shot down in vast numbers, while hovering and screaming about the place. Sometimes straw is used for the same purpose, which is previously strewed near the reeds and alder bushes where they are known to roost, which being set on fire, the havoc among the birds from their foes is enormous; the party returns at day to pick up the slaughtered game.



THE COMMON STARLING.*

The length of this bird is eight inches and a half, two and a half of which belong to the tail, and one to the beak, which is awl-shaped, angular, flattish, and rather blunt, yellow, brown towards the end, and the tip blue. The iris is nut-brown; the claws an inch long, and deep flesh-coloured. All the plumage is of a blackish hue, changing to purple towards the front of the body, and to green towards the hind part, and on the wing coverts; the quill feathers and tail are black, edged with light rust-red; the tips of the head feathers, and under the neck, are reddish-white, those of the back light rust-red, and those of the under part of the body whitish, which gives the bird a speckled appearance. The old males are darker, having no white tips to the feathers of the head, cheeks, throat or belly. The beak of the female is rather brown than yellow; the light spots on the head, neck, and breast, are larger, and the edge of the feathers is wider, which gives it a lighter and more speckled appearance.

The starling, like all other species, has its varieties; such are the white, the streaked or variegated, the white-headed, that whose body is white with a black head, and the ash-gray.

When wild the starling is found all over the old world. It prefers forests and little thickets, surrounded by fields and meadows; it is often seen, especially in spring, on towers, steeples, and churches; but it is never found either in high mountains or ridges. In Britain it departs in October in great flights for the south, and returns in like manner in the beginning of March. During the journey, these birds pass the night among the rushes, where, on the least alarm, they make a great tumult.

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* Sturnus Vulgaris.—Linnæus.

In confinement it would be very amusing to let them run free; but let them be ever so neat themselves, they would render the room dirty. When caged, they must be furnished with a cage at least two feet long, and one and a half both in height and width. Very restless and always in motion, they require sufficient space to take exercise and keep their plumage uninjured.

When wild they eat not only caterpillars, snails, worms, insects, and the flies which torment the cattle in the field; but also cherries, grapes, berries of all sorts, and different sorts of grain, as millet and hemp seed.

In confinement they eat meat, worms, bread, cheese, the universal paste, indeed any food, provided it is not sour. When first caught, they are supplied with earth and meal worms, and they soon become as tame as if they had been brought up from the nest; but as there is no rule without exceptions, we sometimes meet with individuals who obstinately refuse to eat, whatever pains may be taken to induce them, and which die of hunger. This bird delights in bathing often, it must therefore never be left without fresh water in a proper vessel.

The starling builds in the holes of trees, and even in boxes, or pots with long necks, suspended to trees, or under the roof, or in pigeon houses. Its simple nest is composed of dry leaves, hay, and feathers, Like the swallow, it returns to the same nest every year, only taking care to clear it out. It lays twice in the year, seven eggs each time, whose colour is ashy green. The young, before moulting, are of rather a yellowish soot colour than pure black. The beak is dark brown; those which are bred from the nest, and which are easily reared on white bread soaked in milk, repeat the airs they are taught in a stronger and more distinct manner than bullfinches and linnets. They can, indeed, repeat a succession of couplets without changing or mixing them. In Voigtlande, the peasants use the starling like domestic pigeons; they eat the young, which they take before they can fly; by this means they obtain three broods, but they do not touch the last, both in order not to discourage and drive away the father and mother, and not to diminish this branch of economy. Starlings have been seen to build in dwelling-houses, in an earthen vase with a long neck, appropriated to the purpose.

It is principally in autumn, and in places filled with reeds, that the bird-catchers take great numbers of starlings in nets prepared for the purpose. They may also be procured by means of an osier fish-net placed among the reeds, which they frequent in the evening, and baited with cherries. Though this means is limited, as many as a hundred have been procured in one night.

In Thuringia it is never attempted to catch them for the house, except in the month of March, when snow falls after their arrival. For this purpose, limed twigs are put in places cleared from snow, and beside swampy ditches, with some earth-worms for a snare, into which they fall as easily as chickens. The starling becomes wonderfully familiar in the house; as docile and cunning as a dog, he is always gay, wakeful, soon knows all the inhabitants of the house, remarks their motions and air, and adapts himself to their humours. In his solemn tottering step, he appears to go stupidly forward; but nothing escapes his eye. He learns to pronounce words without having his tongue cut, which proves the uselessness of this cruel operation. He repeats correctly the airs which are taught him, as does also the female, imitates the cries of men and animals, and the songs of all the birds in the room with him, It must be owned that his acquirements are very uncertain; he forgets as fast as he learns, or he mixes up the old and the new in utter confusion; therefore, if it is wished to teach him an air, or to pronounce some words clearly and distinctly, it is absolutely necessary to separate him from other birds and animals, in a room where he can hear nothing. Not only are the young susceptible of these instructions, but the oldest even show the most astonishing docility. This is a remarkable fact in the history of the Feathered Tribes.

THE BALTIMORE ORIOLE.*

"This bird," says Audubon, "arrives from the south, perhaps from a more distant region, and enters Louisiana as soon as spring commences there. It approaches the planter's house, and searches among the surrounding trees for a suitable place in which to settle for the season. It prefers, I believe, the trees that grow on the sides of a gentle declivity. The choice of a twig being made, the male oriole becomes extremely conspicuous. He flies to the ground, searches for the longest and driest filaments of moss, which in that state is known by the name of Spanish beard, and whenever he finds one fit for his purpose, ascends to the favourite spot where the nest is to be, uttering all the while a continued chirrup, which seems to imply that he knows no fear, but, on the contrary, fancies himself the acknowledged king of the woods. No sooner does he reach the branches than with bill and claws, aided by an astonishing sagacity, he fastens one end of the moss to a twig with as much art as a tailor might do, and takes up the other end, which he secures also, but to another twig a few inches off, leaving the thread floating in the air, like a swing, the curve of which is, perhaps, seven or eight inches from the twigs. The female comes to his assistance with another filament of moss, or, perhaps, some cotton thread, or other fibrous substance, inspects the work which her mate has done, and immediately commences her operations, placing each thread in a contrary direction to those arranged by her lordly mate, and making the whole cross and recross, so as to form an irregular network. The nest has now been woven from the bottom to the top, and so secured that no tempest can carry it off without breaking the branch to which it is suspended. Remark what follows. This nest contains no warming substance, such as wool, cotton, or cloth, but is almost entirely composed of the Spanish moss, interwoven in such a manner that the air can easily pass through it. The parents are, no doubt, aware of the intense heat which will exist ere long in this part of the world, and moreover take especial care to place their nest on the north-east side of the trees. On the contrary, had they gone as far as Pennsylvania or New York, they would have formed it of the warmest and softest materials, and have placed it in a position which would have left it exposed to the sun's rays; the changes of the weather during the early period of incubation being so great there, that the bird looks on these precautions as necessary to ensure the life of its brood against intense cold, should it come; while it knows that the heat in these northern latitudes will not be so great as to incommode them.

In confirmation of this statement, Wilson, speaking of this bird, which he says arrives in Pennsylvania in May, observes of a nest before him: "The materials are flax, hemp, tan, hair, and wool, woven into a complete cloth; the whole tightly sewed through and through with long horse hairs, several of which measure two feet in length. The bottom is composed of thick tufts of cowhair, sewed also with strong horsehair. So solicitous is the baltimore to procure proper materials for his nest, that, in the season of building, the women in the country are under the necessity of watching their thread that may chance to be out bleaching, and the farmer to secure his young grafts; as the baltimore finding the former, and the strings which tie the latter, so well adapted for his purpose, frequently carries off both; or should the one be too heavy, and the other too firmly tied, he will tug at them a considerable time before he gives up the attempt. Skeins of silk and hanks of thread have often been found, after the leaves were fallen, hanging round the baltimore's nest, but so woven up and entangled as to be entirely irreclaimable."

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* Wilson.

THE ORCHARD ORIOLE.*

The Orchard Oriole is another of this genus, which visits the United States in spring, and fixes his pendent nest to the extremity of the twigs of spreading trees. Wilson says, "They are so particularly fond of frequenting orchards, that scarcely one orchard in summer is without them. They usually suspend their nest from the twigs of the apple-tree, and often from the extremities of the outward branches. It is formed exteriorly of a particular species of long, tough, and flexible grass, knit or sewed through and through in a thousand directions, as if actually done with a needle. An old lady of my acquaintance, to whom I was one day showing this curious fabrication, asked me, in a tone between joke and earnest, whether I did not think it possible to teach these birds to darn stockings? The nest is hemispherical, three inches deep by four in breadth; the concavity scarcely two inches deep by two in diameter. I had the curiosity to detach one of the fibres or stalks of dried grass from the nest, and found it to measure thirteen inches in length, and in that distance it was thirty-four times hooked through and and returned, winding round and round the nest! The inside is usually composed of the light downy appendages attached to the seeds of the *platanus accidentalis*, or button wood, which form a very soft and commodious bed. Here and there the outward work is extended to an adjoining twig, round which it is strongly twisted, to give more stability to the whole and prevent it from being overset by the wind. When they choose the long pendent branches of the weeping-willow to build in, as they frequently do, the nest, though formed of the same materials, is made much deeper, and of lighter texture. The circumference is marked out by a number of these pensile twigs that descend on each other, like ribs, supporting the whole; their thick foliage, at the same time, completely concealing the nest from view. These long pendent branches, being sometimes twelve and even fifteen feet in length, have a large sweep in the wind, and render the first of these precautions necessary to prevent the eggs or young from being thrown out; and the close shelter afforded by the remarkable thickness of the foliage is, no doubt, the cause of the latter." The orchard oriole is a lively, active, restless bird, never idle, never inanimate, but perpetually on the alert, his shrill and rapid carol being maintained with little intermission. He keeps up a system of destruction among the insect tribes and caterpillars which infest the leaves and buds of fruit trees, thereby rendering man no little service, for hundreds of these pests to the farmer are not sufficient for the daily consumption of himself, his mate, and their young; the multitudes thus destroyed by a single pair of birds must be prodigious.

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* Icterus Mutatus.—Wilson.

THE ROOK.*

"Who that has been brought up in the country has not been accustomed from his infancy to hear the cawing of the rookery; to witness the active labour, and cares, and schemes of these birds in spring?—has not stood by his father or any other old friend, while the young have been fetched down from the lofty elm by the cross-bow?—has not run to fetch it as it fell?—has not clambered into the green tree in which it has, perhaps, lodged in falling, and hooked it down?—has not helped the keeper to carry to the house the black feathery bunch of young rooks thus shot, for the cook to convert into the most savoury of country pies; or to be despatched in different directions as presents to friends? Who has not, on bright summer days, when the young have got abroad, seen them in almost every green oak, or on the tuft of every green meadow, when the country was all flowers and sweetness, with fluttering wings, demanding food from their busy parents?—and in the still, broad, quiet sunshine of summer evenings, as he sat in garden arbour, or at open window, with the dear old friends of his youth, has not often seen them come soberly homewards from their day's wanderings, in a rustling and jetty array, from whose wings the light of the setting sun glanced, seeking those ancient and towering trees, which had overspread the hall for ages? Who, in the days of warm feeling and expanding affections, when life was a long summer of happiness and gaiety—when, perhaps, the attachment of a life was growing—as he has ridden home in the sweet dusk of a June midnight, has not heard them in their lofty nest, half roused by the horse's tread, give a rustle, a caw, and then all quiet again? . . . . In short, what Englishman recalls the dear old home of his birth and his youth, with all its affections, and delights, and transactions; who recalls its garden-nooks, its bee-hives by the sunny wall, its fields, its woods, its friends, its favourite animals, its sorrows and its merriments, its gay meetings and its partings to meet there no more, everything that makes that spot what no other spot on earth besides ever can be by any magic, even the most powerful magic of love—and does not find the English rook a part of his retrospect, uttering its joyous, rough, John Bullish caw, or his laughable midnight muttering, insignificant as he is in himself, an indispensable dweller in the paradise of the past?" *

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* Corvus Frugilegus.

The Rook has a great analogy to the carrion crow, and, indeed, is not to be distinguished from it without considerable difficulty. The principal distinctive character consists in the nudity of the base of the bill and of the forehead, and upper part of the throat in the rook, which parts are covered with feathers in the carrion crow; but as even this is not observable in the young bird, it seems likely to be rather an artificial than a natural distinction, arising from the rook thrusting its beak into and raking the ground, and thus causing a trituration on the parts in question, which may efface the feathers. To recognise the rook, therefore, before its first moult, we must observe that its bill is longer than the head, and is entirely straight; while in the crow it is not longer than the head, and the upper mandible is bent at the point, and jagged towards the end on both sides; the feathers, moreover, of the front part of the neck are silky, and rounded at their end in the rook; but they are stiff and pointed in the crow. The iris also is hazel in the crow, but bluish in the present species. Rooks, however, do not feed on carrion, or the flesh of large animals, but confine themselves to grain, and the larvæ of insects, especially the chafer. It is, therefore, not easy to determine whether they are a greater good or evil to the agriculturist.

These birds seem partial to our island, as they remain here the whole year; but in France, and most parts of Europe, especially to the south, they are birds of passage; and in Spain, it is said, are not known. Their gregarious disposition, particularly during incubation, on the tops of lofty trees, is well known. After the breeding season they disperse, and in a great measure abandon the trees in which, they bred their young. The eggs, five in number, a little smaller than those of the crow, are bluish green, with dark blotches; they begin to build early in March, and the male and female sit by turns. White and pied varieties are sometimes seen.

Some years ago there were several large elm trees in the college garden behind the Ecclesiastical Court, in Doctors' Commons, in which a number of rooks had taken up their abode, forming, in appearance, a sort of *convocation* of aerial ecclesiastics. A young gentleman who lodged in an attic, and was their close neighbour, frequently entertained himself with thinning this covey of black game by means of a cross-bow. On the opposite side lived a curious old civilian, who observing from his study that the rooks often dropped senseless from their perch, making no sign, nor any sign being made to his vision to account for the phenomenon, sets his wits to work to discover the cause. It was, probably, during a profitless time of peace, and the doctor having plenty of leisure, weighed the matter over and over, till he was at length fully satisfied that he had made a great ornithological discovery, that its promulgation would give wings to his fame, a distinction which he seems to have highly appreciated.

His goose-quill and foolscap were quickly in requisition, and he actually wrote a treatise, stating circumstantially what he himself had seen, and in conclusion, giving it as the settled conviction of his mind, that rooks were subject to the *falling sickness!*

The Rev. Mr. Bingley has observed, "that as soon as rooks have finished their nests, and before they lay, the cocks begin to feed the hens, who receive their bounty with a fondling, tremulous voice and fluttering wings, and all the little blandishments that are expressed by the young while in a helpless state, and that this gallant deportment of the male is continued through the whole season of incubation."

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* William Howitt.

THE RAVEN.*

The Raven, which is the largest species of its order, is black, but there are purplish reflexions on the upper part of the body, and greenish tints underneath. The female is distinguished by a colour less deep, by a weaker bill, and by being rather smaller than the male. The plumage of the young, also, is not so decided a black, and it is without reflexions. The tongue is black, cylindrical at the base, flatted and forked at the extremity; the œsophagus is dilated at the point of its junction with the stomach, and forms a sort of gizzard, of which this bird is otherwise destitute. The stomach of the raven is neither muscular, like that of the gallinaceous and other birds, nor is it like that of the birds of prey and of quadrupeds, but, in point of solidity of its coats, is intermediate between the two. Thus, a small tinned tube will not be altered in shape in the stomach of this bird, though it will be in that of a pigeon; but a tube of lead, being a softer metal, will be flatted in the stomach of a raven, though an ordinary membranaceous stomach will have no such effect upon it. In accordance with this comparative weakness of stomach in these birds, we find that when they take grain, they break it by means of the bill or feet before they swallow it.

Carrion and putrid animal matter, which they can smell at a great distance, forms the basis of the food of these birds; when such, however, is not forthcoming, they live on fruits, grain, insects, dead fish, and molluscous animals, whose shells they break against stones. It is said that they will at times attack living animals, as rats, partridges, and frogs, and that falling on the back of the larger sort, as asses and buffaloes, will seriously injure them by repeated strokes with the bill. The fetid nature of their food renders these birds unfit for the table. They were unclean to the Jews, and are generally considered in a similar light by most savage nations.

Ravens, when threatened or attacked, fear neither cats nor dogs; and render themselves formidable, not merely to children, but even to men, whose legs they will peck at, and wound, with some effect. Notwithstanding their courage, however, they may be brought to associate with man; and they have been employed for purposes of falconry.

They are also greatly attached to one another, and live, in general, in pairs, each pair remaining connected for several years, probably for the whole period of their lives. They make their nests in the crevices of rocks, in holes towards the tops of deserted towers, and sometimes on the summit of an isolated tree. This nest, which is very large, is composed exteriorly of branches and roots; bones of quadrupeds, or fragments of hard substances, form the second coat; and the interior is lined with moss, etc. The female lays, about the month of March, five or six pale greenish and bluish eggs, lined and spotted with a neutral tint; both the male and female sit, and the incubation lasts about twenty days. There may be generally found in the vicinity of these nests a considerable accumulation of grains, nuts, fruits, and other things, though it appears these hoards are rather made by the blind instinctive impulse of the bird, than for the use of the young. These at their birth are whitish.

It is said that the mother leaves the young for some time after their birth without nourishment, and that she prepares the first food they have for them in her stomach, in the manner of pigeons. As is generally the case with animals of a sort of domestic inclination, the male defends his young family with great courage and address, and will succeed in repelling the attacks of the kite.

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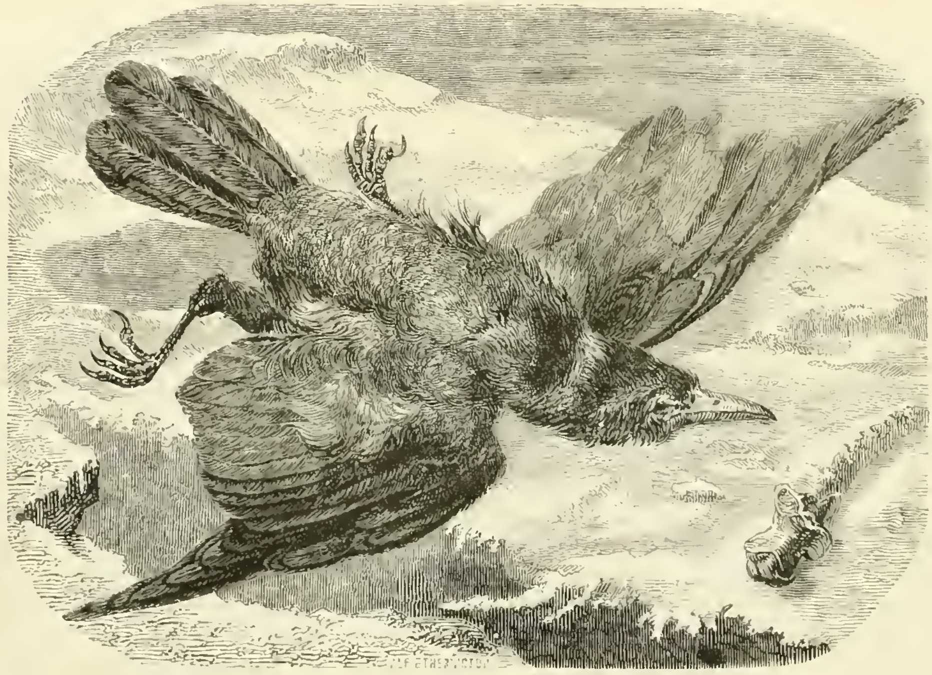
* Corvus Corax.

The young are ready about the month of May to quit the nest. So long as they are but partially able to provide for themselves, the parents bring them food during the day, and every evening the family re-assemble in the nest, and this practice continues the whole summer, which has led to the presumption that they breed more than once in the year. Though not quick breeders, however, these birds are very long-lived. When the young have attained strength enough to provide altogether for themselves, the old birds drive them from their own adopted vicinity to seek an asylum elsewhere.

Some birds sit so close on their eggs, that no approach of danger can induce them to quit their nest. The ingenious author of the "Natural History of Selborne" gives a very interesting anecdote of this in the case of a raven :—"In the centre of a grove there stood an oak, which, though shapely and tall on the whole, bulged out into a large excrescence about the middle of the stem. On this a pair of ravens had fixed their residence for such a series of years, that the oak was distinguished by the title of the raven-tree. Many were the attempts of the neighbouring youth to get at this eyrie : the difficulty whetted their inclinations, and each was ambitious of surmounting the arduous task. But when they arrived at the swelling, it jutted out so in their way, and was so far beyond their grasp, that the most daring lads were awed, and acknowledged the undertaking to be too hazardous. So the ravens built on, nest upon nest, in perfect security, till the fatal day arrived in which the wood was to be levelled. It was in the month of February, when these birds usually sit. The saw was applied to the butt, the wedges were inserted into the opening, the woods echoed to the heavy blows of the beetle or mallet ; the tree nodded to its fall; but still the dam sat on. At last, when it gave way, the bird was flung from her nest ; and, though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground."



THE DEAD RAVEN.

THE CARRION CROW.*

" Say, weary bird, whose level flight
  Thus, at the dusky hour of night,
Tends through the midway air,
  Why yet beyond the verge of day
  Is lengthen'd out thy dark delay,
Adding another to the hours of care?

  The wren within her mossy nest
  Has hushed her little brood to rest;
The wild wood-pigeon, rock'd on high,
  Has coo'd his last soft note of love,
  And fondly nestles by his dove,
To guard their downy young from an inclement sky.

  Each twittering bill and busy wing,
  That flits through morning's humid spring,
Is still,—listening perhaps so late
  To Philomel's enchanting lay,
  Who now, asham'd to sing by day,
Trills the sweet sorrows of her fate.

  Haste, bird, and nurse thy callow brood,
  They call on Heaven and thee for food,
Bleak,—on some cliff's neglected tree;
  Haste, weary bird, thy lagging flight—
  It is the chilling hour of night,
  Fit hour of rest for thee!"

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* Corvus Corone.—Linn.

The most unpractised observer can scarcely fail to distinguish a crow, for the plumage, though generally dense and dark, is soft and lustrous, and the species bear a great resemblance to each other. They also exhibit corresponding instincts, being, if not shy, at least cunning and watchful. They are omnivorous in the fullest sense of the term, and will poke their beaks into everything they can find, from a boiled potatoe to a dead horse.

The carrion crow, which is spread over both the old and new continents, feeds, like the ravens, on putrid flesh; to which, however, it adds insects, worms, fine grain, fruit, and eggs. In winter it associates with the rooks and hooded crows, and may be seen, with them, on fresh turned earth, searching for worms, insects, and other larvæ. At the approach of night, they assemble in considerable flocks, and retire to the highest trees of the forest. Early in the spring, when the rooks quit the south of Europe in flocks, to build their elevated cities in the high trees in the north, the carrion crows separate into pairs, and proceed alone in the great work of nidification. The nest, like that of the rook, is constructed at the summit of a tree of slender branches, matted with clay and horse-dung, and lined within with fibres. The female lays four or five eggs of a paleish green, with obscure spots and bars.

The old birds have great affection for their young, which remain a long time under their fostering care, and to which the parents have the address to carry the eggs of partridges in their bills. They lay but once in the year, unless the eggs or young be destroyed by accident. They will engage with the accipiters in defence of their young and eggs. It is said that the conjugal union of these birds continues during life.

The carrion crow will learn, when domesticated, to speak like the raven, and displays, in its general habits, no small sagacity. It will sometimes seize chickens from the poultry-yard, and will also destroy such small birds as it can find in the fowler's snare, which it escapes falling into itself, probably by the perfection of its sense of smell; bird-lime, or glue, and meat infused with nux-vomica, are used therefore to take them instead of the net.

White, and varied varieties, are sometimes met with, especially in high latitudes, as in the ravens; indeed, a general analogy prevails between these species, in nearly all their characters, essential and indifferent.

The carrion crow is, perhaps, the most generally known and least beloved, of all our land birds; having neither melody of song, nor beauty of plumage, nor civility of manners, to recommend him; on the contrary, he is branded as a thief and a plunderer. Hated as he is by the farmer, watched and persecuted by almost every bearer of a gun, who all triumph in his destruction, had not heaven bestowed on him intelligence and sagacity far beyond common, there is reason to believe, that the whole tribe long ago would have ceased to exist. The myriads of worms, moles, mice, caterpillars, grubs and beetles, which he destroys, are altogether overlooked; but on account of his depredations among the poultry and game, no mercy is shown him.

A gentleman, who resided on the Delaware, a few miles below Easton, had reared a crow, with whose tricks and society he used frequently to amuse himself. This crow lived long in the family, but at length disappeared, having, as was then supposed, been shot by some vagrant gunner, or destroyed by accident. About eleven months after this, as the gentleman one morning, in company with several others, was standing on the river shore, a number of crows happening to pass by, one of them left the flock, and flying directly towards the company, alighted on the gentleman's shoulder, and began to gabble away with great volubility, as one long absent friend naturally enough does on meeting with another. On recovering from his surprise, the gentleman instantly recognised his old acquaintance, and endeavoured, by several civil but sly manœuvres, to lay hold of him; but the crow, not altogether relishing quite so much familiarity, having now had a taste of the sweets of liberty, cautiously eluded all his attempts ; and suddenly glancing his eye on his distant companions, mounted in the air after them, soon overtook and mingled with them, and was never afterwards seen to return.

THE HOODED CROW.*

Like the rook, this bird associates in numerous flocks, and is, perhaps, still more familiar with the haunts of man, preferring, especially in winter, the vicinity of our farms and hamlets, and picking up its food in the kennels and dunghills. Like the rooks also in several countries, it changes its abode twice a year, appearing in flocks in the middle or at the end of autumn, and departing in a northerly direction about the beginning of spring. It visits the south of England in October, or the beginning of winter, arriving and departing with the woodcock, and retiring north, to breed, in the beginning of April. In the northern parts of the island it is more frequent than in the south ; and in the Orkneys, Hebrides, and Shetland Islands, it is the only genuine crow, the rook and carrion being there unknown. In these districts, and in some parts of Scotland and Ireland, it is resident throughout the year. Where opportunities offer, it breeds in the pines and other large trees, in default of which it nestles in the cavities of rocks.

The female, which is rather smaller than the male, and of less lively hues, usually lays four, five, or six eggs, of a greenish-blue, marked with many spots of blackish-brown. It pairs during the whole of the breeding season ; and both parents are much attached to their offspring. They are remarked for their double cry, of which one is hollow, and well known, and the other shrill, and somewhat resembling the crowing of a cock. When other food is wanting, they will eat cranberries and other mountain fruits ; in open fertile countries, they live much on grain, worms, and carrion ; but they often resort to the sea-shores, and prey on the various animal matters thrown up by the tide. Frisch observes, that they are expert at picking fish-bones, and that, when water is discharged from ponds, they quickly perceive the fish which are left in them, and lose no time in darting on them. They not only attack the eyes of lambs and diseased sheep, but of horses that have got entangled in bogs. In the Faroe Islands, where they abound, they are particularly mischievous, picking the seed from the fields, digging up the newly-planted potatoes, destroying the barley before it is ripe, and carrying off goslings and ducklings, or the fish which is hung up to dry, to their young. In some parts of these islands, they assemble to about the number of twelve hundred in one place, and at one time, as if by concert. A few of the congregation sit with drooping heads, others seem as grave as judges, and others again are very bustling and noisy. The meeting breaks up in the course of an hour ; and it is not uncommon to find one or two dead on the spot. These, according to the insinuation of Landt, are either *criminals punished for their offences*, or invalids that have died of some disorder. Low observes, that in the Orkneys they meet together in spring, as if to deliberate on the important concerns of summer, and, after flying about in this collected state for eight or ten days, separate into pairs, and betake themselves to the mountains.

* Corvus Cornix.—Linn.

THE JACKDAW.*

The Jackdaw is a frequenter of the haunts of man, active, noisy, and familiar almost to impudence; but it is a lively bird; and though at times it may take a little grain, that is far more than compensated by the number of insects and worms that it destroys in the course of the year.

The jackdaw is the smallest of the tribe, being only about half the weight of the rook; but the wings are larger in proportion. It is about fourteen inches long, twenty-nine broad, and weighs between nine and ten ounces. The bill, feet, top of the head, and wing coverts, and secondary quills, are black. The back of the head and nape smoke gray, and the irides the same, but much lighter. The remaining parts black with a grayish tinge on the upper side, and a bluish on the under. The black is variously glossed with blue and violet reflexions. These are the ordinary colours; but like all birds that inhabit cultivated lands, and are of course affected by the differences to which cultivation gives rise, jackdaws vary considerably in colour, partly from age, partly not; sometimes the gray is nearly white, at other times the bird is black all over; and there are many slighter and intermediate variations.

Holes and chinks are the immediate places in which jackdaws nestle; but these must be elevated above the level ground, and the higher they are the bird likes them the better. It is probable that the original instinct is the protection of its eggs and young from the weasels. Rocks, the edges of neglected quarries, the projecting parapets of bridges, towers, steeples, ruins, and various other places, are the haunts of this bird.

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* Corvus Monedula.

GROUP OF PIGEONS.

THE BLUE JAY.*

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* Garrulus Cristatus. Vieill.

This bird is believed to be peculiar to North America, and is regarded with great interest on account of the brilliancy of his plumage, the address of his tones and gestures, and his strange loquacity. He is an almost universal inhabitant of the woods, frequenting the deepest recesses of the forest, where in the spring he pours forth his harmony in every thicket, and where his squalling voice often alarms the deer, to the great indignation of the hunter. He has great variety of undulations of voice, according to the humour of the moment, while there is scarcely a bird to whose peculiarities of song he cannot tune his note. Sometimes he indulges in soft chatterings like those of the duck, but no sooner does he discover the approach of a stranger, than he sets up a sudden and vehement outcry, flying off from the thick foliage of the cedar where he has been concealed, and screaming with all his might, as if calling all the feathered tribes of the neighbourhood to witness some outrageous usage he had received. The call-note which he utters to the female has been described by Wilson as easily mistaken by a stranger for the repeated "screakings" of an ungreased wheelbarrow.

The jay measures seven inches in length, the head being ornamented with a crest of light blue or purple feathers, which he can elevate or depress, while a narrow line of black runs along the frontlet, rising on each side higher than the eye. A collar of black, proceeding from the hind head, passes with a graceful curve down each side of the neck to the upper part of the breast, where it forms a crescent; the throat and belly are white; the greater wing-coverts are a rich blue; the interior sides of the wing feathers are dusky black; the tail is long and cuneiform; the breast and sides under the wings are a dirty white, and the tongue, bill, legs, and claws are black.

This bird builds a large nest, usually in the cedar or apple tree, and lines the interior with dry, fibrous roots. The male is especially careful not to be seen near the spot, that he may not betray the locality, and pays his visits as silently and secretly as possible.

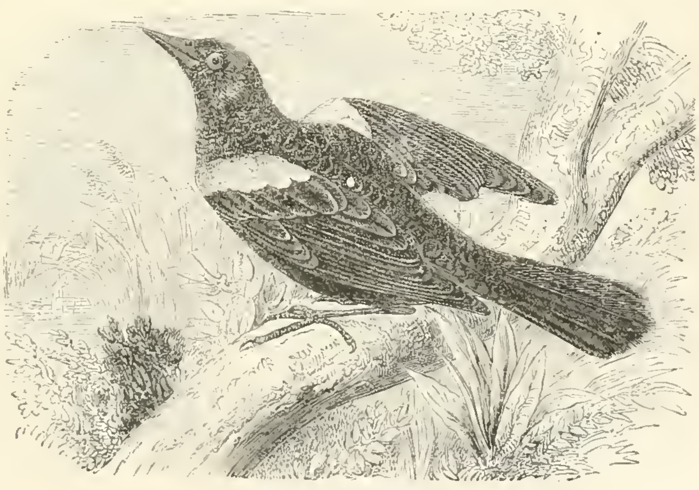
The blue jay is a most determined enemy of the owl, whom he seems to have peculiar gratification in tormenting. Let him discover the retreat of one of these birds, and at once summoning the whole feathered fraternity to his assistance, they attack him most vigorously on all sides, and make a noise which, on a still day, may be heard more than half a mile away; while the owl acknowledges every expression of opinion in reference to himself with a broad, goggling stare. At length, a sufficient number of assailants are collected to make it inconvenient to stay longer, and followed by the entire retinue of his foes, the owl retreats beyond their jurisdiction.

The jay is by no means always a peaceable neighbour. Sometimes he may be seen prowling along the woods and among the thickets and hedgerows, plundering the eggs, and tearing the young piecemeal, to the consternation and grief of their parents and the spectators who approach the scene of desecration and slaughter. When pressed with hunger, he assaults little birds, and will even eat of any fragment of animal matter or carrion he may be able to secure. In some cases, however, he is far from showing this ferocity of disposition. Mr. Wilson obtained one, and placed him in a cage with a female orchard oriole, who put on airs of alarm, as if she felt endangered and insulted by such intrusion; but as the jay conducted himself in the most humble and condescending way, her ceremonious jealousy vanished, and they lived on terms of perfect harmony and good humour. But the eminent naturalist must tell the story in his own words :—" When the jay goes to drink, his messmate very impudently jumps into the water to wash herself, throwing the water in showers over her companion, who bears it all patiently, venturing now and then to take a sip between every splash, without betraying the smallest token of irritation. On the contrary, he seems to take pleasure in his little fellow-prisoner, allowing her to pick (which she does very gently) about his whiskers, and to clean his claws from the minute fragments of chestnuts which happen to adhere to them. This attachment on the one part, and mild condescension on the other, may, perhaps, be partly the effect of mutual misfortunes, which are found not only to knit mankind, but many species of inferior animals, more closely together, and show that the disposition of the blue jay may be humanised, and rendered susceptible of affectionate impressions, even for those birds which, in a state of nature, he would have no hesitation in making a meal of."

This bird has a decided talent for mimicking, and also for teasing others of its feathered companions, from which it appears to derive no common satisfaction. One of the birds that is especially annoyed in this way is the little-hawk, whose cry the jay imitates when it meets him, and feigns the shrieks of a bird which has been captured and wounded. This noise brings other jays to the scene of action, and they all join in their annoyances of the hawk. The hawk, however, is not to be outdone, and at length singling out one of the more prominent of its tormentors, seizes it at an unguarded moment, and offers it up as a sacrifice to his hunger and resentment. Instantly the tone of the other birds is changed, and with loud cries they proclaim the tragical conclusion of the sport.

The jays perform important functions in the economy of nature. Their chief employment in the autumnal season is foraging for the supply of their winter stores; and in performing this necessary duty, they drop a great number of seeds over hedges and fields in their flight, where they alight to deposit them in nests, holes, and other places which they use as store-houses. These birds alone are able, in a few years, as we are emphatically assured, to replant all the cleared lands.

The blue jays associate together in considerable numbers in the months of September and October, when they may be found in groups of forty or fifty, hovering about the oaks in pursuit of their favourite food, the acorn. They seldom exceed this number, and even these are usually scattered with great irregularity over a considerable part of the wood; yet it is stated by Dr. Latham, that "the blue jays of North America often unite into flocks of 20,000 at least, which, alighting on a field of ten or twelve acres, soon lay waste the whole. Wilson positively affirms, that a flock of blue jays of 20,000 would be as extraordinary an appearance in America, as the same number of magpies or cuckoos would be in Britain; and he states his firm conviction that the red-winged blackbirds,* in the environs of the River Delaware, alone devour and destroy more Indian corn than all the blue jays of North America.



ORIOLUS PHŒNICEUS.

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* Oriolus Phœniceus.

THE COMMON JAY.*

The British species is one of the most ornamental of our indigenous birds. It dwells in woods, beyond the outskirts of which it seldom wanders. Its food consists of insects, fruits, and forest seeds. Species of this little group are found in every quarter of the known world except New Holland.

The jay builds its basket-like nest in trees or high coppice wood and hedges, and lays five or six eggs of a dull whitish olive, mottled very obscurely with pale brown. Towards the large end there are usually two or three black lines.

The jays rarely come into the open country, but make great havoc in gardens and cultivated grounds in the neighbourhood of woodlands. Their food is much less varied than that of the true crows, but they may still be styled omnivorous. Their plumage is generally gay and even brilliant; and there is a beautiful speculum on the wing. But showy as the jay is, it is much more frequently heard than seen; nor is it easy to observe it at all, for the more it is followed, the deeper does it plunge into the thick of the coppice. The best place for a full view of it is where peas or cherries grow near its haunts, as while it greedily feeds on these its wary habits will allow of its being longer watched than it may be under other circumstances.

Jays neither flock nor have meetings similar to those of the magpies, and some of those crows that breed apart from each other; nor, though it has been observed in some instances, has it been fully proved that the young remain with the old birds after they are completely fledged and capable of finding their own food. They are, indeed, much more predatory than the magpies, though considerably smaller. They occasionally pounce on birds, and kill and devour them; they are very destructive to the eggs of small birds, and they will eagerly catch mice.

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* Garrulus Glandarius.

One of the most remarkable peculiarities of the jays is the volubility of their sounds. The alarm-note the bird utters on the appearance of danger, or even of a stranger in its haunts, is extremely harsh, but it has a love-note singularly soft, "yet so low and apparently cautious, that it seems whispering to its mate, as if to hide their affections and labours from the other tenants of the grove. Even then it is very imitative, and though it does not attempt the songs of the warblers, it is very adroit at bleating, screaming, neighing, and, in short, imitating all the harsher sounds." Bewick says:—"We have heard one imitate the sound made by the action of a saw so exactly, that though it was on a Sunday, we could hardly be persuaded that the person who kept it had not a carpenter at work in the house. Another, at the approach of cattle, had learned to hound a cur dog upon them, by whistling and calling upon him by his name. At last, during a severe frost, the dog was by that means excited to attack a cow big with calf, when the poor animal fell on the ice, and was much hurt; the jay was complained of as a nuisance, and its owner was obliged to destroy it."

Mudie, another careful observer, remarks:—"Words in which the letter *r* occurs are soonest learned, not only by the jay, but by most birds that can be taught to articulate. That is easily accounted for by the unyielding nature of the mandible, which forces the air to come out between the upper part of the tongue and the palate, on which that trills. A man cannot easily pronounce the *r* in any but Northumberland fashion, if he grins the while; and those who use the tongue simpering and softly, merely touch but do not pronounce it."

Mr. Gould, who gives three figures of foreign jays in his "Century of Birds," justly remarks, that "the close affinity which the *Garrulus lanceolatus* bears to some species inhabiting the United States and Mexico is worthy of remark, as a corroboration of the fact so often insisted on, that similar forms of ornithology are found in countries widely separated from each other, whose temperatures are alike." Indeed, we are reminded by the last-mentioned bird of the *Garrulus cristatus*, the blue jay of America; while another, the *Garrulus bispecularis*, recalls the idea of the common jay.

Another very ornamental species—

——— Proud of cærulean stains
From heaven's unsullied arch purloined—

is that mentioned by Pallas as having been shot by Steller when Behring's crew landed upon the coast of America. It is the *Corvus Stelleri*, of Latham, by whom it was first described from a specimen in Sir Joseph Banks' collection from Nootka Sound. A larger and most magnificent bird is the Columbia jay (*Garrulus Bullokii*, Wagler; *G. gubernatrix*, Temm.), figured in Mr. Audubon's splendid work; the colour is bright blue, with a lofty crest of separate plumes, the throat and breast black, the abdomen whitish, and two of the central tail feathers extending far beyond the others. It occurs chiefly in Mexico and California.

THE CHOUGH.*

This very handsome bird is locally distributed, but is, perhaps, not so rare as has been generally accounted. In Britain it only frequents sea-coasts, never venturing far inland; and in this respect seems to differ considerably from the birds on the continent, where Alpine inland districts are in part inhabited by them. In Britain, the rocky coasts of Devon and Cornwall, various parts of Wales, and some of the adjacent isles, are its southern localities; in Scotland, St. Abb's Head on the eastern side, and the shores of Wigtonshire and Galloway on the western, are frequented; and we learn that it has reached even the Hebrides. In Ireland, Mr. Thompson writes, "the chough frequents the sea-coast chiefly, and occurs in certain localities in the north, south, and east of Ireland." But that part where it appears to be most abundant is the Isle of Man, an island of considerable extent, and having precipitous coasts for at least two-thirds of its circumference. Round these shores it is so common, that nearly thirty specimens were once procured in a forenoon. The habits of the bird, as well as the flight and manner of alighting among the rocks and fissures, very considerably resemble those of the jackdaw, so much so, that when Mudie first enjoyed the satisfaction of seeing this bird on a part of the mainland where they were not so frequent, he mistook their flight for that of the last-named bird, and missed some opportunities of procuring what he then considered a very rare bird; a glimpse of their red legs first undeceived him. "During the breeding season," he says "when we have chiefly seen these birds, we found them almost constantly on the coast, near the caves and fissures where the nests were placed; and they were very seldom seen more than a quarter of a mile inland, but they made excursions so far, alighting among the rocky parts of the upland sheep-pasture, and occasionally feeding and walking on the dry pasture itself, where they appeared to procure insects, their stomachs being chiefly at this time filled with coleoptera. It is also said to feed on grains and berries; and we are not aware of any particular food afforded by the rocky British coasts, which in that country so peculiarly attracts them to such localities, while on the continent the Alpine ranges on the borders of the snow-lines are their usual haunts."

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* Fregilus Graculus.—Selby.

When the situation of the nests was approached, no great restlessness or anxiety was exhibited. They were placed in rents of the rocks, in the entrances of the caves, or in overhanging ledges of rock, built much in the same manner as those of the true crows. The eggs, from five to seven in number, are of a verditer or bluish-green, spotted and blotched with blackish-brown, some specimens nearly resembling those of the jackdaw, and apparently subject to nearly the same variation.

This beautiful species is entirely of a deep glossy black above, with steel blue and green reflexions; the plumage on the head and neck is rather loose and tinted with purple; underneath, it is of a deep and uniform tint with less lustre. The bill is of a brilliant vermillion red, strong, bending for the whole length, and without any trace of a notch; the plumes covering the nostrils are close and stiff, and appear as if rounded off with scissors on the bill. The legs and feet are of the same brilliant tint with the bill, and are strongly formed; the claws brownish-black, crooked and strong; the development of the wings and tail large and powerful, the flight consequently light and buoyant; the length about fifteen inches. The bill and legs of the young do not show for some time the brilliant red colour.

One of these birds was kept by Colonel Montague in his garden for some years, and of it he has given the following interesting account. "His curiosity is beyond bounds, never failing to examine anything new to him. If the gardener is pruning, he examines the nail-box, carries off the nails, and scatters the shreds about. Should a ladder be left against the wall, he instantly mounts, and goes all round the top of the wall; and, if hungry, descends at a convenient place, and immediately travels to the kitchen window, where he makes an incessant knocking with his bill till he is fed and let in; if allowed to enter, his first endeavour is to get up-stairs; and, if not interrupted, goes as high as he can, and gets into my room in the attic story: but his intention is to get upon the top of the house. He is excessively fond of being caressed, and would stand quietly for an hour to be smoothed; but resents an affront with violence and effect, by both bill and claws, and will hold so fast by the latter that he is with difficulty disengaged. He is extremely attached to one lady, upon the back of whose chair he will sit for hours; and is particularly fond of making one in a party at breakfast, or in a summer's evening at the tea-table in the shrubbery. His natural food is evidently the smallest insects, even the minute species he picks out of the crevices of the walls, and searches for them in summer with diligence. The common grasshopper is a great dainty, and the fern-chafer is another favourite morsel; these are swallowed whole: but if the great chafer be given to him, he places it under one foot, pulls it to pieces, and eats it piecemeal. Worms are wholly rejected; but flesh, raw or dressed, and bread, he eats greedily; and sometimes barley with the pheasants, and other granivorous birds occasionally turned into the gardens, and never refuses hemp-seed. He seldom attempts to hide the remainder of a meal. With a very considerable share of attachment, he is naturally pugnacious, and the hand that the moment before had tendered him food and caresses, will repent an attempt to take him up. To children he has an utter aversion, and will scarcely suffer them to enter the garden. Even strangers of any age are challenged vociferously; he approaches all with daring impudence; and so completely does the sight of strangers change his affection for the time, that even his favourites and best benefactors cannot touch him with impunity in these moments of evident displeasure."

THE MAGPIE.*

The Magpies are of smaller dimensions than the crows, properly so called, and their tails, instead of being either round or square, are long and graduated. Their dispositions, however, are equally omnivorous, and they are distinguished by the same sly and furtive cunning. There is only a single European species, our common British kind (*C. Pica*, Linn.), which occurs all over Europe, and is well known in North America and in some parts of Asia. Many beautiful species occur in China, and other eastern countries, such, for example, as the red-billed pie (*P. Erythrorhyncha*, Gould). Its size exceeds that of our common kind, and the great length of its tail bestows upon it a still more slender and elegant aspect. The prevailing colours are blue, with bars of black and white. It is often kept in aviaries, where it is highly esteemed on account both of its docility and beauty. This species, likewise, inhabits the Himalaya mountains, and there is reason to believe that it is fierce and tyrannical in a state of nature. Mr. Shore states, that one which he kept in captivity, although it refused other food, pounced ferociously upon living birds, which were presented by way of experiment, and eagerly devoured them. When seen amid the foliage of trees, it forms an ornamental and conspicuous object, flitting from bough to bough, its long and flowing tail waving in the wind, and its whole form full of vivacity and grace. The Chinese magpie (*P. sinensis*), made known by the researches of General Hardwicke, seems widely extended over tracts of land of very various character as to height and situation. It inhabits the higher portions of the Himalayas, the plains at their base, and a great part of the Chinese empire.

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* Corvus Pica.—Penn.

"This bird," says Dr. Richardson, "so common in Europe, is equally plentiful in the prairie-lands of America; but it is singular, that though it abounds on the shores of Sweden, and other maritime parts of the Old World, it is very rare on the Atlantic coasts of America, or near Hudson's Bay; only stray individuals passing to the eastward of the Mississippi or of Lake Winnipeg. Mr. Say informs us that it winters on the Missouri, and takes its departure northward on the 23rd of March. It does not entirely quit the banks of the Saskatchewan even in winter, but is much more frequent in summer. On comparing its eggs with those of the European bird, they are found to be larger and narrower; and though the colours are the same, the blotches are larger and more diffused. The manners of the American bird are precisely the same as those we are accustomed to observe in the English one." Mr. Swainson adds, that he has been able to compare English and Arctic specimens with one from the interior of China, communicated to him by Dr. Gray, so eminent in zoology and botany, and that he cannot perceive the slightest difference to indicate a variety, much less of a species.

The common magpie is the type of Cuvier's subgenus of Pica, distinguished by the convex upper mandible, and the long and cuneiform tail. This, in the magpie, has the two middle feathers of the same length, but the side feathers decrease rapidly in succession; about the neck the feathers are loose. It is one of the most beautiful species of this country, but loses much of its lustre in a state of captivity. The magpie is very common in England, and feeds both on animal and vegetable substances, frequently killing young ducks and chickens. It is said also occasionally to pick out the eyes of lambs, hares, &c., if weak; it also eats insects, fruits, and even grain.

No birds display more industry in the construction of their nests; they generally select the summit of the highest trees, especially if standing alone or in a row; but in forests, or very retired situations, they sometimes choose a mere bush for the purpose. The male and female begin this work together in February, placing the nest not, like the rook, in full sight of all from the ground, but so enveloped and surrounded with branches, that when the leaves appear the nest is concealed. Thus—

> The thievish pie, in two-fold colours clad,
> Roofs o'er her curious nest with fern-wreath'd twigs,
> And side-long forms her curious door: she dreads
> The talon'd kite, or pouncing hawk: savage
> Herself—with craft suspicion ever dwells.

The nest is made of small branches well interlaced together, leaving an aperture only in the side. The bottom of the nest is furnished with a matting of soft and flexible roots; and although the diameter of the inside of the nest does not much exceed six inches, it is upwards of two feet on the outside. It is said to occupy the birds two months to build this nest, and M. Vieillot has observed, that if the nest is destroyed, or the birds are prevented from finishing it, they either content themselves with an old nest of their own species, or take to an old crow's nest after repairing the outside. The same gentleman has also noticed that, at the early part of the breeding season, each pair of these birds begin more nests than one, though they finish that only in which the eggs are deposited.

Ordinarily they have but one brood in a year; but if their young be destroyed, they will sometimes have a second and even a third. The eggs, seven or eight in number, are yellowish-white spotted with brown or gray. The male and female sit alternately, and the incubation continues about fourteen days. The young are born blind, and remain so several days. The parents display great care of them, and continue their attentions a considerable time.

"Whilst I was travelling in Scotland," says the Rev. John Hall, "as I was one day amusing myself with the objects within my view, on the road between Huntley and Portsoy, I observed two magpies hopping round a gooseberry-bush, in a small garden near a poor-looking house, in a peculiar manner, and flying out and into the bush. I stepped aside to see what they were doing, and found, from the poor man and his wife, that as there are no trees all around for some miles, these magpies, during several succeeding years, had built their nest, and brought up their young, in this bush; and that foxes, cats, hawks, and other creatures might not interrupt them, they had barricaded, not only their nest, but had encircled the bush with briers and thorns in a formidable manner; nay, so completely, that it would have cost even a fox, cunning as he is, some days' labour to get into the nest.

"The materials in the inside of the nest were soft, warm, and comfortable; but all on the outside so rough, so strong, and firmly entwined with the bush, that without a hedge-knife, hatch-bill, or something of the kind, even a man could not, without much pain and trouble, get at their young; for from the outside to the inside of the nest extended as long as my arm.

"They fed the young brood with frogs, mice, worms, or anything living within their power to subdue. It once happened that one of the magpies having seized a rat, which it was not able to kill, one of the young ones came out of the nest to its mother and the rat, while they were fighting on the outside of the bush, and assisted her to kill it, which they were not able to accomplish, till the father, arriving with a dead mouse, also lent his aid.

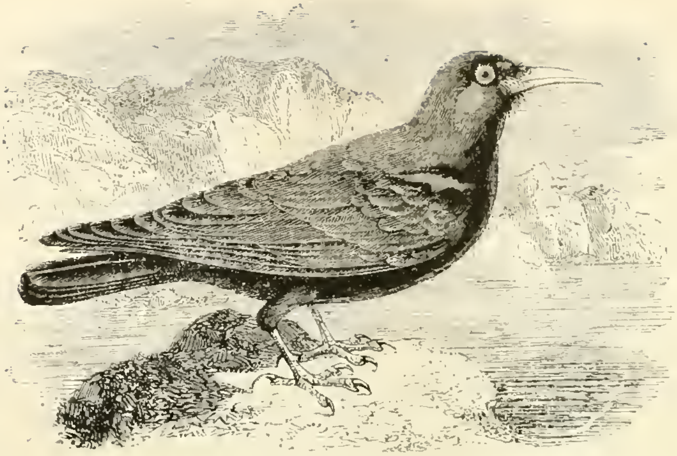
"These magpies had been faithful to one another for several summers, and drove off their young, as well as every one else that attempted to take possession of their nest. This they carefully repaired and fortified in the spring, with strong, rough, prickly sticks, that they sometimes brought to it by uniting their force, one at each end pulling it along, when they were not able to lift it from the ground."

PICA VAGABUNDA.—VIEILL.

Alluding to the use of magpies in hawking, Sir John Sebright says: "Nothing can be more animating than this sport; it is, in my opinion, far superior to every other kind of hawking. The object of the chase is fully a match for its pursuers—a requisite absolutely necessary to give an interest to any sport of this kind; and it has the advantage of giving full employment to the company, which is not the case in partridge hawking. A down or common, where low trees or thorn bushes are dispersed at the distance of from thirty to fifty yards apart, is the place best calculated for this diversion. When a magpie is seen at a distance, a hawk is immediately to be cast off. The magpie will take refuge in a bush the moment he sees the falcon, and will remain there until the falcon arrives, with the hawk waiting on in the air. The magpie is to be driven from his retreat; and the hawk, if at a good pitch, will stoop at him as he passes to another bush, from whence he is to be driven in the same way, another hawk having been previously cast off, so that one or the other may always be so situated as to attack him to advantage. The second hawk is necessary, for the magpie shifts with great cunning and dexterity to avoid the stoop; and when hard pressed, owing to the bushes being rather far apart, will pass under the bellies of the horses, flutter along a cart-rut, and avail himself of every little inequality of the ground in order to escape. Four or five assistants, besides the falconer, who should attend solely to his hawks, are required for this sport. They should be well mounted, and provided with whips; for the magpie cannot be driven from a bush by a stick; but the crack of a whip will force him to leave it, even when he is so tired as hardly to be able to fly. The magpie will always endeavour to make his way to some strong cover; care, therefore, must be taken to counteract him, and to drive him to that part of the ground where the bushes are farthest from each other. It is not easy to take a magpie in a hedge. Some of the horsemen must be on each side of it; some must ride behind, and some before him; for unless compelled to rise, by being surrounded on all sides, he will flutter along the hedge, so as to shelter himself from the stoop of the falcon. Many requisites are necessary to afford this sport in perfection:—a favourable country, good hawks, and able assistants."

With the Pies is usually placed the Pica Vagabunda, a species found in the East.

The *Ternia* have with the carriage and tail of the Pies, an elevated bill, with the upper mandible gibbous, and the base furnished with velvety feathers almost like the birds of paradise.



THE ALPINE CROW.[*]

The Chocards,[†] as they are called in France, have the compressed, arched, and sloped beak of the blackbirds, but their nostrils are covered with feathers like those of the crows, to which they have been annexed. Such is the Alpine chocard. Its hue is black, with the beak yellow, the feet at first brown, then yellow, and in the adult state red. It builds in the clefts of rocks of the higher mountains, from whence these birds descend in large flocks into the valleys. They live on insects, snails, and fruits, and do not disdain carrion.

In India there is another bird of this kind, the Sicrin, distinguished by their barbless stalks, as long as the body, on each side, among the feathers which cover the ears.

THE NUTCRACKER CROW.[‡]

This bird is allied to the true crows in several particulars, but has been separated from the systems of different writers. It is not uncommon in some parts of Europe, but very rarely visits England. Pennant remarks that the specimen from which he took his description was the only one he ever heard of that was shot in these kingdoms.

Montague mentions another that was killed in Kent. He adds, "Mr. Anstice assures us he saw one of this rare species near Bridgewater, upon a Scotch fir, in the autumn of 1805. This accurate observer of nature could not be deceived, as he examined the bird, and attended to its actions for some time, with the aid of a pocket telescope, which he usually carried with him for similar purposes. In August, 1808, one of these birds was shot in the north of Devon. Another is stated to have been shot, during the same year, in Cornwall.

The nutcracker is said to lay up a store of acorns and nuts for winter; but the statement may be doubted, as only animals who become torpid in cold weather require such a provision. Such stores are most probably the collection of dormice, or some such creatures, which being found, has been plundered by this bird. The same faculty is attributed to the jay and the nuthatch; but they only rob the granary of mice, who frequently deposit their winter store in the hollow of a tree, such as beans, peas, corn, nuts, and acorns.

This bird, whose partial food seems to be the kernels of nuts, most probably breaks the shell in the manner of the nuthatch, by hacking a hole in it, or splitting the shell by reiterated strokes of the bill, for which that part seems better adapted than for cracking it by compression, as the grosbeak breaks the stones of the haw, whose bill is short and strong, and furnished with muscles of prodigious strength.

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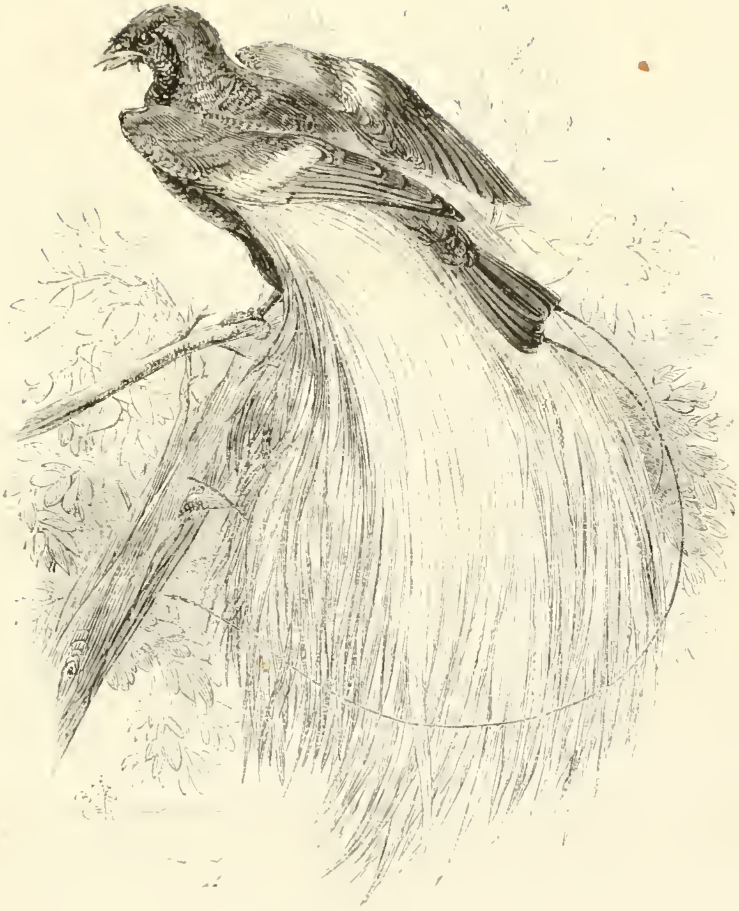
[*] Pyrrhocorax Alpinus.

[†] Pyrrhocorax.

[‡] Corvus Caryocatactes.—Penn.



THE GREAT EMERALD BIRD OF PARADISE.*

The genus *Paradisea* contains the famous birds of paradise so noted during our early intercourse with the eastern countries. The bill is straight, compressed, rather strong, unnotched, the nostrils surrounded by a close tissue of feathers of a velvet texture, sometimes resplendent with metallic lustre. The birds are native to New Guinea and the neighbouring islands, and in consequence of the delicately graceful structure of their plumage, and the pure and beautifully blended colours by which they are adorned, the species in general may be regarded as the most highly prized of all the feathered race. Their history was long obscure as night, and even now we have but few features of their character developed by the actual observation of trustworthy witnesses.

In the second edition of "Pennant's Indian Zoology," there is a general description of the genus from Valentyn and other writers, by Dr. J. R. Forster, preceded by a learned disquisition on the fabulous phœnix of antiquity, a bird of the size of an eagle, decorated with gold and purple plumes, and more particularly described by Pliny as being characterised by the splendour of gold around the neck, with the rest of the body purple, the tail blue varied with rose colour, the face adorned with combs or wattles, and the head furnished with a crest. This excellently adorned phœnix Dr. Forster very properly supposes to have been no other than a symbolical Egyptian illustration of the annual revolution of the sun, and the conversion of the great year, which, according to Manilius, corresponds with the supposed life of the phœnix, and from which period the same course of seasons and position of the heavenly bodies is renewed. Now, though it is certain, as Dr. Forster observes, that the bird of paradise was never known to ancient writers, and that whatever the Egyptian priests delivered concerning their fabulous phœnix has no apparent agreement with the birds in question, yet it is remarkable enough that the names applied to them, both by Indian and European nations, attribute something of a supposed celestial origin. Dr. Shaw, however, thinks that this notion has, in all probability, arisen merely from their transcendent beauty, and the singular and delicate disposition of their plumage. The Portuguese who navigated to the Indian islands called them *Passaros da Sol,* in like manner as the Egyptians regarded their imaginary bird as symbolising the annual revolution of that great luminary. The inhabitants of the Island of Ternate call them *Manuco Dewata,* or the birds of God.

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* Paradisæa Major.

The birds of paradise have great diversity of beauty. Some of them have thinly-barbed feathers to cover the closed wing, so prolonged as to form immense tufts, and extending far backward beyond the body. There are, also, in general, barbless filaments attached, which are even more elongated than the airy lateral plumes. Some, also, have thinly webbed feathers on the flanks, but they are short; while another class have neither elongated filaments nor lateral tufts.

The most fanciful conjectures have been entertained in reference to the habits of these birds. By some they have been regarded as inhabitants of the air, living only on the dew of heaven, and never touching the surface of this terrestrial sphere; and others, while believing they never rested on the ground, have considered that they subsisted on insects. Some have ranked them among the birds of prey, and others—including Buffon—asserted that they had no feet, and could neither walk nor swim, and were incapable of any other means of progression except by flight.

Some little mystery beclouded the views of many, in consequence of the fact that the people of the islands from whence the bird of paradise was first obtained have paid little regard to the study of natural history. The fact is, that its legs being large and strong, and neither ornamental nor required in the skins made up for general commerce, were cut off; while the natives, thus concealing what they regarded as a deformity, considered themselves entitled to augment their demands when they offered the bird for sale. The purchaser of it in Europe naturally inquired for the legs of which it was destitute, and the seller began to think that it could have none. Having arrived at this satisfactory conclusion, it was a necessary inference that a bird without legs must live in the air, which would render them unnecessary; the extraordinary beauty of the plumage added to the deception, and as it was considered to have "heavenly beauty," it was thought also to have a "heavenly residence." In accordance with this view its name was given, and the false reports which have been propagated on the subject have thus arisen. Hence Linnæus and the older writers styled the bird *apoda,* or footless, although the man who introduced the bird to scientific observation in Europe distinctly stated that it was in no prominent respect different from other birds.

The true residence, or breeding-place, of these birds seems to be Papua, or New Guinea, from whence they make occasional excursions to some smaller neighbouring islands. They fly in flocks of about thirty or forty, led, it is alleged, by a single bird, which the natives call their king, but which is said to be of a different species. It is further pretended, that when this bird settles the whole flight settle also, in consequence of which they sometimes perish, being unable to rise again, owing to the peculiar structure of their wings. They also always fly against the wind, lest their plumage should be discomposed. While flying they make a noise like starlings, but their common cry rather resembles that of a raven, and is very audible in windy weather, when they dread the chance of being thrown upon the ground. In the Aru Islands they are seen to perch on lofty trees, and are variously captured by the inhabitants, with bird-lime snares, and blunted arrows. Though many are taken alive, they are always killed immediately, embowelled, the feet cut off, the plumed skins fumigated with sulphur, and then dried for sale. The Dutch ships frequenting the sea between New Guinea and Aru, a distance of about twenty miles, not unfrequently observe flocks of paradise birds crossing from one to the other of these places, but constantly against the wind. Should a gale arise, they ascend to a great height, into the regions of perpetual calm, and there pursue their journey. With respect to their food, we have little certain information from the older authors, some of whom assert they prey on small birds, a supposition which Dr. Shaw inclines to think is favoured by their strength of bills and legs, and the vigour with which they act in self-defence. They are said also to feed on fruits and berries; and Linnæus says they devour the larger butterflies.

A recent account of these birds in a state of nature is given by M. Lesson, who, though he deeply laments his short stay at New Guinea, only thirteen days, appears to have turned his visit to singular advantage.

"The birds of paradise," he says, "or at least the emerald (*Paradisea apoda*, Linn.), the only species concerning which we possess authentic intelligence, live in troops in the vast forests of the Papuans, a group of islands situated under the equator, and which is composed of the islands Arou, Wagiou, and the great island called New Guinea. They are birds of passage, changing their quarters according to the monsoons. The females congregate in troops, assemble upon the tops of the highest trees in the forest, and all cry together to call the males. These last are always alone in the midst of some fifteen females, which compose their seraglio, after the manner of the gallinaceous birds." M. Lesson then gives the following extract from his journal written on the spot. After observing that the birds of paradise, with the exception of two species, were brought to the corvette, "La Coquille," by the Papuans, and that the quantity afforded reason for supposing that these birds, so esteemed in Europe, were singularly multiplied in these countries, he thus continues:—"The manucode presented itself twice in our shooting excursions, and we killed the male and female. This species would seem to be monogamous, or perhaps it is only separated into pairs at the period of laying. In the woods, this bird has no brilliancy; its fine coloured plumage is not discovered, and the tints of the female are dull. It loves to take its station on the teak-trees (*arbres de teck*), whose ample foliage shelters it, and whose small fruit forms its nourishment. Its irides are brown, and the feet are a delicate azure. The Papuans call it 'saya,'

"Soon after our arrival on this land of promise (New Guinea) for the naturalist, I was on a shooting excursion. Scarcely had I walked some hundred paces in those ancient forests, the daughters of time, whose sombre depth was perhaps the most magnificent and stately sight that I had ever seen, when a bird of paradise struck my view: it flew gracefully and in undulations; the feathers of its sides formed an elegant and aerial plume, which, without exaggeration, bore no remote resemblance to a brilliant meteor. Surprised, astounded, enjoying an inexpressible gratification, I devoured this splendid bird with my eyes; but my emotion was so great that I forgot to shoot at it, and did not recollect that I had a gun in my hand till it was far away. One scarcely has a just idea of the paradise birds from the skins which the Papuans sell to the Malays, and which come to us in Europe. The people formerly hunted the birds to decorate the turbans of their chiefs. They call them *mambéfore* in their tongue, and kill them during the night by climbing the trees where they perch, and shooting them with arrows made for the purpose, and very short, which they make with the stem (*rachis*) of the leaves of a palm (*latanier*). The campongs, or villages of Mappia and of Emberbakêne are celebrated for the quantity of birds which they prepare, and all the art of the inhabitants is directed to taking off their feet, skinning, thrusting a little stick through the body, and drying it in the smoke. Some more adroit, at the solicitation of the Chinese merchants, dry them with the feet on. The price of a bird of paradise among the Papuans of the coast is a piastre at least. We killed during our stay at New Guinea a score of these birds, which I prepared for the most part. The emerald, when alive, is of the size of a common jay; its beak and its feet are bluish; the irides are of a brilliant yellow; its motions are lively and agile; and, in general, it never perches except upon the summit of the most lofty trees. When it descends, it is for the purpose of eating the fruits of the lesser trees, or when the sun in full power compels it to seek the shade. It has a fancy for certain trees, and makes the neighbourhood re-echo with its piercing voice. The cry became fatal, because it indicated to us the movements of the bird. We were on the watch for it, and it was thus that we came to kill these birds; for when a male bird of paradise has perched, and hears a rustling in the silence of the forest, he is silent, and does not move. His call is *voike, voike, voike, voiko,* strongly articulated. The cry of the female is the same, but she raises it much more feebly. The latter, deprived of the brilliant plumage of the male, is clad in sombre attire. We met with them, assembled in scores, on every tree, while the males, always solitary, appeared but rarely.

"It is at the rising and setting of the sun that the bird of paradise goes to seek its food. In the middle of the day it remains hidden under the ample foliage of the teak tree, and comes not forth. He seems to dread the scorching rays of the sun, and to be unwilling to expose himself to the attacks of a rival. . . . .

"In order to shoot birds of paradise, travellers who visit New Guinea should remember that it is necessary to leave the ship early in the morning, to arrive at the foot of a teak tree or fig tree, which these birds frequent for the sake of their fruit (our stay was from the 26th of July to the 9th of August) before half-past four, and to remain motionless till some of the males, urged by hunger, light upon the branches within range. It is indispensably requisite to have a gun which will carry very far with effect, and that the grains of shot should be large; for it is very difficult to kill an emerald outright, and if he be only wounded it is very seldom that he is not lost in thickets so dense that there is no finding the way without a compass.

"The little emerald paradise bird feeds, no doubt, on many substances in a state of liberty. I can affirm that it lives on the seeds of the teak tree, and on a fruit called *amihou,* of a rosy-white, insipid, and mucilaginous, of the size of a small European fig, and which belongs to a tree of the genus *ficus.*"

M. Lesson then goes on to state, that he saw two birds of paradise which had been kept in a cage for more than six months by the principal Chinese merchant at Amboyna. They were always in motion, and were fed with boiled rice, but they had a special fondness for cockroaches (*blatta*).

Bennett, in his "Wanderings," gives the following account of a bird of paradise* which he found in Mr. Beale's aviary at Macao, where it had been confined nine years, exhibiting no appearance of age:—

"This elegant creature has a light, playful, and graceful manner, with an arch and impudent look; dances about when a visitor approaches the cage, and seems delighted at being made an object of admiration; its notes are very peculiar, resembling the cawing of the raven, but its tones are by far more varied. During four months of the year, from May to August, it moults. It washes itself regularly twice daily, and, after having performed its ablutions, throws its delicate feathers up nearly over the head, the quills of which feathers have a peculiar structure, so as to enable the bird to effect this object. Its food during confinement is boiled rice mixed up with soft egg, together with plantains, and living insects of the grasshopper tribe; these insects when thrown to him the bird contrives to catch in his beak with great celerity; it will eat insects in a living state, but will not touch them when dead.

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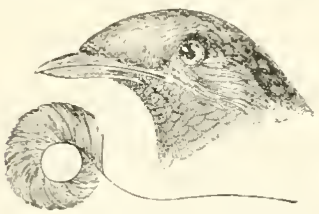
* Paradisea Apoda.

"I observed the bird, previously to eating a grasshopper given him in an entire and unmutilated state, place the insect upon the perch, keep it firmly fixed with the claws, and divesting it of the legs, wings, &c., devour it, with the head always placed first. The servant who attends upon him to clean the cage gives him food, &c., strips off the legs, wings, &c., of the insects when alive, giving them to the bird as fast as he can devour them. It rarely alights upon the ground, and so proud is the creature of its elegant dress, that it never permits a soil to remain upon it, and it may frequently be seen spreading out its wings and feathers, and regarding its splendid self in every direction, to observe whether the whole of its plumage is in an unsullied condition. It does not suffer from the cold weather during the winter season at Macao, though exposing the elegant bird to the bleak northerly wind is always very particularly avoided. Mr. Beale is very desirous of procuring a living female, if possible, to breed them in his aviary.

"The sounds uttered by this bird are very peculiar; that which appears to be a note of congratulation resembles somewhat the cawing of a raven, but changes to a varied scale of musical gradations, as, *he, hi, ho, haw,* repeated rapidly and frequently, as lively and playfully he hops round and along his perch, descending to the second perch to be admired, and congratulate the stranger who has made a visit to inspect him; he frequently raises his voice, sending forth notes of such power as to be heard at a long distance, and as it could scarcely be supposed so delicate a bird could utter; these notes are, *whock, whock, whock, whock,* uttered in a barking tone, the last being uttered in a low tone as a conclusion.



HEAD OF PARADISÆA REGIA.

HEAD OF ASTRAPIA GULARIS.—VIEILL.

HEAD OF PARADISÆA VIRIDIS.

HEAD OF EPIMACHUS REGIUS.—LESSON.

"A drawing of the bird, of the natural size, was made by a Chinese artist. The bird advanced steadily towards the picture, uttering at the same time its cawing congratulatory notes; it did not appear excited by rage, but pecked gently at the representation, jumping about the perch, knocking its mandibles together with a clattering noise, and cleaning them against the perch, as if welcoming the arrival of a companion. After the trial of the picture, a looking-glass was brought, to see what effect it would produce upon the bird, and the effect was nearly the same; he regarded the reflection of himself most steadfastly in the mirror, never quitting it during the time it remained before him. When the glass was removed from the lower to the upper perch, he instantly followed, but would not descend upon the floor of the cage when placed so low.

"One of the best opportunities of seeing this splendid bird in all the beauty of action, as well as display of plumage, is early in the morning, when he makes his toilet; the beautiful sub-alar plumage is then thrown out, and cleaned from any spot that may sully its purity by being passed gently through the bill; the short chocolate-coloured wings are extended to the utmost, and he keeps them in a steady flapping motion, as if in imitation of their use in flight, at the same time raising up the delicate, long feathers over the back, which are spread in a chaste and elegant manner, floating like films in the ambient air.

"I never yet beheld a soil on its feathers. After expanding its wings, it would bring them together so as to conceal the head, then bending it gracefully it would inspect the state of its plumage underneath. This action it repeats in quick succession, uttering at the time its croaking notes; it then pecks and cleans its plumage in every part within reach, and throwing out the elegant and delicate tuft of feathers underneath the wings, seemingly with much care, and with not a little pride, they are cleaned in succession, if required, by throwing them abroad, elevating them, and passing them in succession through the bill. Then turning its back to the spectator, the actions above-mentioned are repeated, but not in so careful a manner; elevating its tail and long shaft-feathers, it raises the delicate plumage of a similar character to the sub-alar, forming a beautiful dorsal crest, and throwing its feathers up with much grace, appears as proud as a lady dressed in her full ball-dress. Having completed the toilet, he utters the usual cawing notes, at the same time looking archly at the spectators, as if ready to receive all the admiration that it considers its elegant form and display of plumage demand; it then takes exercise by hopping, in a rapid but graceful manner, from one end of the upper perch to the other, and descends suddenly upon the second perch close to the bars of the cage, looking out for the grasshoppers which it is accustomed to receive at this time.

"His prehensile power in the feet is very strong, and still retaining his hold, the bird will turn himself round upon the perch. He delights to be sheltered from the glare of the sun, as that luminary is a great source of annoyance to him if permitted to dart its fervent rays directly upon the cage. The iris frequently, by expanding and contracting, adds to the arch look of this animated bird, as he throws the head on one side to glance at visitors, uttering the cawing notes or barking aloud. . . . . Having concluded, he jumps down to the lower perch in search of donations of living grasshoppers.

"This bird is not at all ravenous in its habits of feeding, but it eats rice leisurely, almost grain by grain. Should any of the insects thrown into his cage fall upon the floor, he will not descend to them, appearing to be fearful that in so doing he should soil his delicate plumage; he therefore seldom or ever descends, except to perform his ablutions in the pan of water placed at the bottom of the cage expressly for his use."

THE GREATER BIRD OF PARADISE.*

This is an exceedingly graceful bird. The long plumes with which it is ornamented prevents its flying except against the wind; for this, if blowing in the course of the bird, would not only disorder these feathers, but, acting on them like sails, they would drive the bird along with irresistible rapidity. These birds abstain altogether from flight during a storm, which would inevitably hurl them to the ground. When on the wing they are noisy, like starlings; but their common cry is said rather to resemble the croaking of ravens, and is particularly audible when, in somewhat windy weather, the incumbrance of their long feathers brings them into imminent danger of falling.

In the Aru Islands they are said to perch on the highest trees, and are taken by the inhabitants with bird-lime or blunt arrows. When taken alive, they defend themselves with their bills, pecking and biting with great resolution. In size this bird is larger than a thrush. The general colour is a deep cinnamon, with the exception of the top of the head and the back of the neck, which are yellow; the feathers which encircle the base of the beak as far as the eyes, and cover the whole of the throat, are like velvet, and of a deep emerald-green. In the male, there springs from each side of the chest a full plume, from sixteen to eighteen inches long, composed of slender shafts, with fine, loose, delicate webs; in some specimens they are bright yellow at the base, fading gradually into straw-colour; in others they are paler. From the tail-coverts spring two slender, naked shafts of great length, which taper gradually to a point, and are of a deep cinnamon-brown. These elegant appendages are said to be lost during four months of the year. In all probability, as in the instance of the Whidah-birds and others, these feathers are the decorations of the breeding season—the period in which all birds put on their gayest and most brilliant attire.

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* Paradisæa Major.

THE MAGNIFICENT BIRD OF PARADISE.*

This is a richly-coloured species; it is of an orange-chesnut colour above, the top of the head and the back being deeper than the rest. The former, in some species, inclines to purple; the tips of the wings and tail are brown, the throat is blackish, with a purple gloss. The breast and under parts are covered with scale-shaped feathers, of a deep changeable golden green colour, having down the breast a blue reflexion. A double ruff, composed of slender plumes, with slightly detached extremities, springs from the back of the neck.

The first series are short and orange-coloured, with a black spot at the end of each; the others are larger and pale yellow. The wing-coverts are orange-coloured, with transverse blackish crescents. From the tail-coverts spring two long, slender shafts of golden green. In size this bird is somewhat inferior to the greater bird of Paradise.

THE KING BIRD OF PARADISE.†

This is one of the smallest and rarest of this delightful group. It is about the size of a sparrow. Above, it is of an intense purplish chesnut, and beneath it is white. A zone of golden green extends across the chest; from the sides spring two fan-like plumes, consisting of six or seven dusky feathers, with the richest golden green. From the tail-coverts spring two long slender shafts, each elegantly terminating in a broad emerald web, rising from one side only of the shaft, and disposed into a flat spiral curl, as will be seen in the figure. The beak and legs are yellowish brown.

We give, in addition to the birds now described, representations of the heads of a few others, which, with the whole of the species, will reward all the attention they receive.

Such, then, is a brief survey of the THIRD FAMILY of the CONIROSTRES, to which is given the general appellation of the CORVIDÆ. It includes a great variety of birds, a description of which we commenced with the rook, and now terminate with the birds of Paradise.

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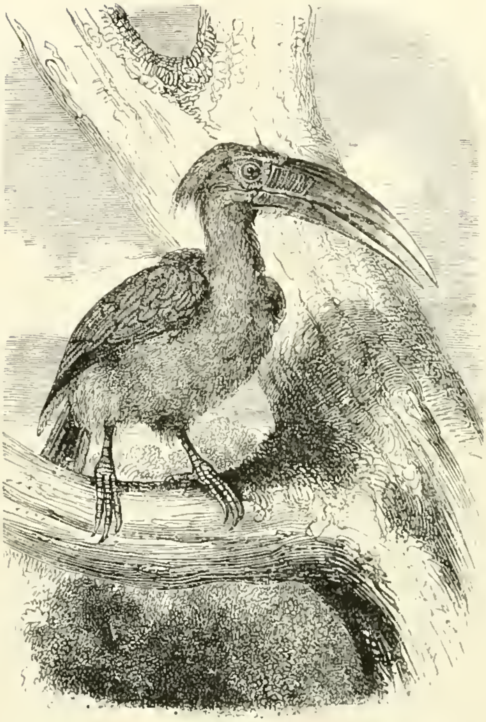
* Paradisæa Magnifica.

† Paradisæa Regia.

THE HORNBILLS.*



THE CROWNED HORNBILL.*

The FOURTH FAMILY comprises the Buceridæ, or the Hornbills, birds of extraordinary appearance, confined to India and Africa. The species are characterised by their enormous bills, toothed along their edges, and frequently surmounted by an additional horny structure, which bestows on them a very striking and peculiar physiognomy. These excrescences vary considerably with the age of the individual, and are scarcely perceptible in the very young birds. The hornbills may be said to resemble the toucans in their heads, the crows in their general habits, and other of the feathered tribes in the form of their feet. Their tongue is very small. These birds may be regarded as omnivorous, as they feed indifferently on fruits, mice, small birds, reptiles, and even carcasses. They exhibit an awkward and uncommon aspect while in the act of flying, in consequence of the great size of their beaks and lengthened tails; and altogether their appearance is extremely uncouth. Perhaps one of the most singular features in their economy consists in their feeding greedily, and without injury, on the seeds of *nux vomica*.

The large bills of these birds are not solid, but of a cancellated internal structure. As the process or appendage to this instrument does not exhibit its genuine form till the full growth of the bird, and the difference between the males and females is very considerable, the determination of the species has been attended with no small degree of difficulty. Buffon has not failed to descant on the mal-conformation of the bill, and on its liability to bruises and fractures; but he was not aware of the fact, that these injuries are annually repaired by an inherent reproductive power, so that even the missing serratures are replaced at every moulting. These birds walk little and awkwardly, and generally perch on trees, especially such as are dead, in the hollows of which they breed.

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* Buceros Coronatus.

THE CONCAVE HORNBILL.*

This is a most remarkable bird, the largest of the species. The beak, from the eye to the tip, measures one foot; the distance from the eye to the end of the tail is three feet four inches. Of this we give, in a full-paged engraving, a very striking and accurate representation. Active and alert, notwithstanding the magnitude of its beak, this bird lightly traverses the trees of the forest, which resounds with its roar. The body is muscular and vigorous; the tail is large; the wings rounded; the colour is black and white; the feathers about the cheeks and back of the neck are loose and hair-like; and the bill is yellowish, with a tinge of scarlet.

The African hornbill (*Buceros Africanus*) is entirely black, and nearly as large as a turkey. The crowned species (*B. coronatus*) is a much smaller bird, scarcely equalling the size of a magpie. Le Vaillant saw a flock of more than five hundred of these birds, in company with crows and vultures, preying on the remains of slaughtered elephants. It is accurately represented in the preceding page. A large and remarkable Indian species has been of late years described by Mr. Hodgson. It measures four feet five inches from tip to tip of the wings, and is three feet six inches in length. Its body exceeds that of the largest raven, but is very lean and incompact. It is believed to feed chiefly on fruits, although it will seize upon reptiles when pressed by hunger. Its freedom from any offensive smell, and the excellence of its flesh, which is much esteemed as an article of food, go far to prove that its habits are chiefly frugivorous. In a domestic state it will eat meat either raw or dressed. Mr. Hodgson's specimen, however, was fed mostly on boiled rice mixed with ghee, and made into large balls. It was never observed to take any water. Whenever it swallowed a mouthful which on second thoughts it considered as somewhat too large, it immediately disgorged it for the sake of a little additional mastication.

THE RHINOCEROS HORNBILL.†

This bird is black; the tail is tipped with white; the beak yellowish and recurved, the casque is red above; the general size is that of a hen turkey, but more slender in proportion; the extent of wing is nearly four feet; the neck is of moderate length; and the tale is slightly cuneated. The plumage is black, but exhibiting, when exposed to a strong light, a slight bluish gloss; but the lower part of the abdomen and the tail are white. The bill measures about ten inches in length, and is of a slightly curved form, sharp-pointed, serrated in a somewhat irregular manner on the edges, and furnished at the base of the upper mandible with an extremely large process, continued for a considerable space in a parallel direction with the bill, and then turned upwards in a contrary direction, in the style of a reverted horn. This appendage, which is eight inches long and four in width at the base, is divided into two portions by a longitudinal black line. Though apparently a formidable weapon, this singular bill is by no means so in reality; for Le Vaillant assures us, that he often put his hand into it without feeling the slightest pain, though the bird exerted all its endeavours to wound him. The young is destitute of the horn-like excrescence on the bill.

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* Buceros Cavatus.

† B. Rhinoceros.—Linn.

This species occurs in the Phillippine islands, in Java, Sumatra, and various countries of India. The individuals belonging to it have a melancholy wild air, a heavy gait, hop instead of walking, and are of a timid and stupid disposition. In a wild state they live on flesh and carrion, and are known to accompany the hunters of bears, wild cows, and stags, to pick up the intestines, and other refuse of these animals, which are assigned to them. In Sumatra, when kept in confinement, they are fed on rice and soft meats; and in various parts of India they are domesticated for the purpose of catching rats and mice. When they have got one of the latter, they squeeze it in their bill to soften it, throw it up in the air, and then receive it entire into their capacious gullet. That described by Le Vaillant never manifested anything like sprightliness, but when its food was presented, it advanced with extended wings, and uttered a slight scream of joy. It was fed with biscuits steeped in water, flesh either raw or dressed, rice, &c. When presented with some newly-killed small birds, it readily swallowed them entire, after bruising them for some time in its bill.

THE CRESCENT HORNBILL.*

This hornbill is black; the tip of the tail is white; the bill is yellowish, and the casque is lunated upwards. It is about the size of the preceding bird, which it considerably resembles; but the casque of the bill is shaped like a crescent or boat, longitudinally affixed by its bottom to the ridge of the upper mandible. It is not concave at the top, but flattened, and the two ends rise up, the one before the other, behind the base of the mandible; that in front somewhat exceeding the length of the other. It is a native of Java, where it is said to frequent large woods, uniting in troops, in order to devour carrion. The female wants the patch of red-brown between the shoulders which characterises the male, and is besides somewhat smaller than the latter.

THE UNICORN HORNBILL.†

This bird is slightly crested; the abdomen is black, and the sides of the tail-feathers white; the bill is yellowish, with compressed casque, black above, and pointed in front. The unicorn hornbill is about the size of a raven, and its outstretched wing measures nearly three feet. The female is rather smaller than the male, and has the casque less elevated, and its point less prominent.

These birds frequent high woods, perching on large trees, especially on the dead boughs. They nestle in the hollows of decayed trunks, and lay about four eggs, of a dirty white. The young are at first quite naked, and their bills have merely a slight ridge, three or four lines high, and which is not clearly defined till the space of three months, when they take their flight, and the point does not project till they are fully grown and have assumed their mature plumage. This part, it has been remarked, is subject to frequent accidents from striking against the branches of trees, when the bird is endeavouring to detach the bark, in order to obtain the insects, small lizards, and tree-frogs which lurk beneath. The individual described by Buffon hopped with both feet at once, forwards and sideways, like a magpie or jay. When at rest, its head seemed to recline on its shoulders; when molested, it swelled, and raised itself with an air of boldness, but its general gait was dull and heavy. It swallowed raw flesh, and would also eat lettuces, which it first bruised with its bill. It caught rats, and devoured a small bird that was thrown to it alive. Its ordinary voice was a short hoarse croak; and it likewise uttered at intervals a sound exactly similar to the clucking of a hen. It was fond of warmth, spread its wings to the sun, and shivered at a passing cloud or gale. It lived only three months, dying before the end of the summer.

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* B. Niger.—Vieill.

† B. Monoceros—Shaw. B. Malabaricus.—Lath.

THE VIOLACEOUS HORNBILL.*

This bird is of a violaceous black; the sides of the wing and tail-feathers are white; the bill is whitish: the casque is compressed, obtuse in front, and marked by a black spot. It nearly resembles the unicorn species, but is of a smaller size. When viewed in a full light, it is very richly glossed with violet, green, and purple reflexions, though when viewed in the shade it appears of a greenish-black. It is a native of Ceylon. Le Vaillant mentions, that he saw one which had been brought to the Cape of Good Hope. It showed much attachment and docility to its keeper, was fed with meat either raw or dressed, and with various kinds of vegetables. It pursued, and readily caught, both rats and mice, which it swallowed entire, after having rubbed them in its bill. Whenever a quarrel arose among other birds, it immediately ran to them, and by the strokes of its bill enforced a suspension of hostilities. It even kept the larger birds in awe, and would make an ostrich take to its heels, pursuing it half flying and half running. It imposed, in short, on the whole menagerie, more, we may presume, by the size of its enormous bill than by any intrinsic strength or courage.

THE ABYSSINIAN HORNBILL.†

This bird is black, with white primary quills, the secondaries ferruginous; the bill is black, and casque abruptly orbicular. According to Mr. Bruce, who has distinctly described this species, it is of a blackish fuliginous hue, measuring three feet ten inches in length, and six feet in extent of wing. On the neck are several protuberances, as in the turkey, of a light blue, changing on various occasions to red. It is found in Abyssinia, generally among the fields of taff, feeding on the green beetles that frequent that plant. As it has a fetid smell, it has been erroneously supposed to subsist on carrion. It usually runs on the ground, and does not hop like most of its congeners; but, when raised, it flies both strong and far. It is supposed to be very prolific, as it has been seen with eighteen young ones attending it. It builds in large thick trees, making a curious nest like that of the magpie, but four times larger than that of the eagle, placed firm on the trunk at no great distance from the ground, and with the entrance always on the east side. The young, according to Le Vaillant, are of a brownish-black colour, with the larger wing-feathers rufous-white; and such seems to have been the specimen described by Buffon.

Of the species which want the horn-like appendage we shall notice only one.

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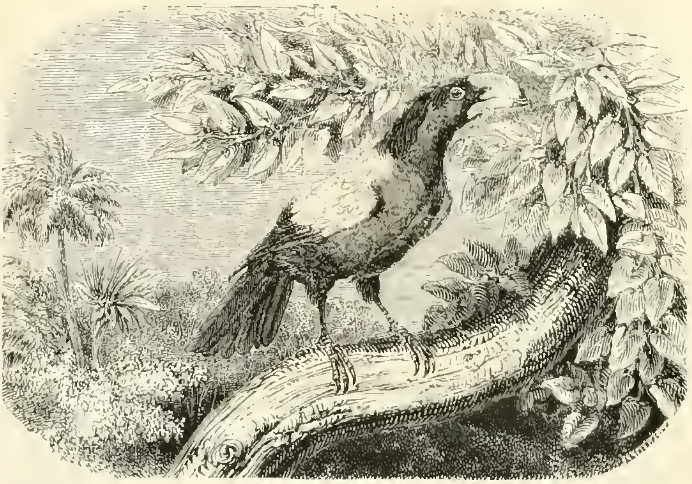
* B. Violaceus.—Le Vail.

† B. Abyssinicus.—Lath.

THE RED-BILLED HORNBILL.*

Black and white, with a simple red bill and red legs. Size not superior to that of a magpie; length rather more than twenty inches. Common in Senegal, where it is known by the name of *Tock*. When young it is very simple and unsuspicious, and will suffer itself to be approached and taken, but it gradually becomes shy as it advances in age. It frequents woods, the old birds perching on the summits of the trees, and soaring with rapid flight, while the young generally remain in the lower parts of the trees, sitting motionless, with the head contracted between the shoulders. In their native state they live on wild fruits, and in confinement on almost anything that is presented to them.



EURYCEROS PREVOSTII.†

This bird is a species inhabiting Madagascar, and has been placed by Lesson in a separate family.

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* B. Nasatus.—Linn, etc.

† Lesson.

THE CREEPER.*

The Fourth Tribe, Tenuirostres, embraces several groups of beautiful and interesting birds, the greater part of which are peculiar to the warmer regions of the globe. They are all distinguished by long slender bills, and hence their name. They are adapted to those parts of the earth where flowers appear in constant succession; from these they obtain their nectar, and an endless supply of the smaller insects designed for their subsistence. We shall, therefore, proceed to trace the outline of the principal families of the tentirostral birds, and point out their character by some of the most prominent and interesting examples.

The old genus *Certhia* of Linnæus was characterised by an arched bill, but the species possessed but little else in common, and have been therefore formed into several minor groups. The true or restricted creepers (*Certhia*, Cuv.), so called from their habit of running round the trunks of trees, have the bill of medium length, curved, compressed, slender, sharp-pointed. The tail is wedge-shaped, and composed of stiff deflected feathers. Our well-known British species (*C. familiaris*) is the only example of the genus found in Europe, and it is, in fact, doubtful whether there is any other elsewhere. The North American creeper seems identical, but the numerous other birds described as creepers do not belong to the genus *Certhia*. The solitary type is a retired inhabitant of the woods, in no way conspicuous in colour, though pleasingly mottled above with black, brown, and grayish white; and being of small size, and seldom showing itself in open places, is deemed rarer than it really is.

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* Certhia Familiaris.

In the greater number the tail is equal. Of these we may name the superb creeper (*C. superba*), described and figured in the magnificent work of M. Vieillot. Its length is six inches; the crown of the head, upper part of the neck, smaller wing-coverts, back, and rump, are bright greenish-gold; across the upper part of the breast runs a bar of bright gilded-yellow, beneath which the whole under parts are deep brownish-crimson; the wings and tail are blackish-brown, the legs are also brown, the bill is black. This beautiful species was discovered at Malimba, in Africa, by M. Perrein. Another highly adorned species, such as limners love to paint, and ladies to look upon, is the *Certhia splendida* of Shaw (*C. afra* and *lotenia*, Linn.) It usually occurs in woody places, and, in addition to its splendid plumage, is said to be worthy of admiration for its musical powers, its song being by some esteemed equal to that of the nightingale. The spotted breasted cinnyris (*C. maculata*) also dwells in the forests of Malimba, and frequently approaches the habitations of the natives, allured by the flowers of the *cytisus cajan*, commonly called the congo pea, which, according to Dr. Shaw, is much cultured by the negroes.

In some of these birds the central feathers of the tail are lengthened in the males. Such is *C. violacea*, a Cape species, which likewise dwells in woods, and is said to build a nest of a singularly elegant construction. In a few the bill is almost straight, as in *C. rectirostris*, Vieillot. Our restricted limits will not admit of our expatiating on this delightful group.

THE COMMON CREEPER.*

The common creeper, though of a somewhat lengthened form, is probably, with the exception of the yellow-crested wren, the smallest bodied British bird. It is said to feed entirely upon insects, although, as a winter resident in many frost-bound regions, we cannot aver that it never swallows seeds. It builds in the hollows of trees, and may be often seen during the delightful autumn, when the rustling woods are fragrant with fallen leaves, flitting from the top of one trunk to the bottom of another, which it ascends by a kind of spiral progression, and then darting downwards to a neighbouring tree, it thus busily pursues from time to time its uninterrupted flight. This bird chiefly shows itself in our shrubberies and wooded pleasure-grounds in winter.

It inhabits not only Britain but the continent of Europe. It is said to migrate to Italy in September and October. It has been particularly noticed in various parts of Germany, and is described as inhabiting North America. Prince Musignano states that it is common and permanent near Rome, and rare near Philadelphia.

The creeper is a most active and restless little bird, ever on the alert, intent on picking up its food, which it finds on the trunks and branches of trees. A constant resident in Britain, it is not easily seen there, for its activity in shifting its position makes it very difficult to follow with the eye. One instant it is before the spectator, and the next, from the rapidity of its passage, the intervening branch or trunk hides the bird from his view. The form of its tail, and the structure of its feet, are exquisitely adapted to its rapid locomotion. Its oft-repeated note is monotonous.

This bird provides a nest in the hole or behind the bark of decayed trees, formed of dry grass, and the inner part of the bark is lined with small feathers. Here six or eight eggs are deposited. While the female sits on these she is regularly fed by the male bird.

THE WALL-CREEPER.*

The habitat of this bird is the south of Europe. It is tolerably abundant in Spain and Italy, always, however, on the most elevated rocks, and very rare on mountains of moderate height. According to Temminck, it is never found in the north. This bird is common in Provence, and may be seen creeping on the outer walls of St. Peter's at Rome.

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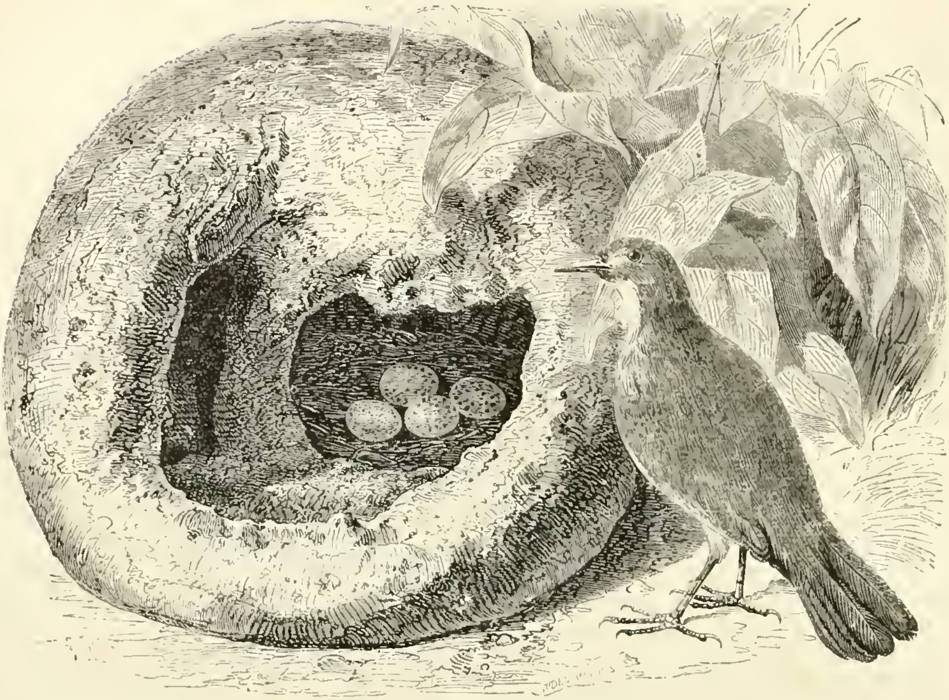
* Certhia Familiaris.

† Certhia Muraria.—Linn.

This bird does against the vertical faces of rocks what the common creeper does on trees. To these surfaces it adheres firmly, without, however, mounting or descending by creeping. Clefts and crevices of rocks are its favourite haunts, and sometimes, but very rarely, the trunks of trees. It feeds on insects, their caterpillars and chrysalises, and is particularly fond of spiders and their eggs.

HEAD OF THE WALL-CREEPER.

The wall-creepers moult twice in the year. In the spring only the throat of the bird is attired in black: this ornament disappears before the other feathers fall. It is impossible to distinguish the sexes after pairing and breeding time. The young may be distinguished from their parents before their first moult, but in winter no difference is observable.



THE FURNARIUS FULIGINOSUS.

This bird inhabits the Malouine islands. It lives on the beach, where its familiarity and fearless disposition permits approach till it may almost be touched with the hand. A naturalist, who sojourned in these islands, remarks: "This bird is so tame that it will almost fly upon the finger; in less than half an hour I killed ten with a small switch, and almost without changing my position. It scratches in the goëmons (*fucus*) which the sea throws on the beach, and there eats worms and small shrimps, which they call sea-fleas (*puces de mer*). Its flight is short. When disturbed, it contents itself with flying two or three paces further off. Its habits are solitary."

The entire plumage of the bird is a clear fuliginous brown. The neck above exhibits yellow and brown ill-defined striæ. The under side of the tail is a bright gray-brown. It constructs its nest in the form of an oven (*four*), whence comes its name.

This bird may properly be classed among the Masons, of which there are many in Britain and America. The blackbird, the wood-robin of America, the pewit fly-catcher, and some others, employ a portion of masonry, either on the outside or in the middle of their nests; but the material used being chiefly mud or clay, the structure is rude and unfinished. But the *Fulnarius*, called "the Baker," from its oven-like structure, is a mason of no ordinary skill. Its nest is composed of earth, and though it is of considerable size, it is often completed in two days' labour, the male and female engaging equally in the task, each carrying alternately a ball of mortar about the size of a filbert. It is six inches and a half in diameter, and an inch thick. The opening, which is lateral, is twice as high as it is wide; and the interior is divided into two chambers, by a partition beginning at the entrance, and carried circularly backwards.

THE SUN-BIRDS.*

THE SPLENDID SUN-BIRD.†

Of this race of the Feathered Tribes it has been truly said:—

> "Each spangled back bright sprinkled specks adorn,
> Each plume imbibes the rosy tinctured morn:
> Spread on each wing the florid season's glow,
> Shaded and verged with the celestial bow;
> Where colours blend an ever-varying dye,
> And wanton in their gay exchanges vie."

Hence it is that they are called "Sun-birds," appearing, as they do, in extraordinary resplendence among their generally dull-plumaged companions. It was indeed to be expected that some portions of the Old World, and more particularly those under the tropics, would present forms bearing a close alliance in their habits, and exhibiting some of the resplendent colouring which so conspicuously marked the plumage of the humming-birds. And these expectations, commenced by theory as a general law, have been

HEAD OF DICÆUM.

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* Soui-mangas. Cinnyris.—Cuv. Nectariniadæ.

† Nectarinia Splendida.—Shaw.

verified in this instance by facts, for the continents of Asia and Africa are the strongholds of this race of fairy birds, which vie with the *Trochilidæ* in brilliancy; and though they differ in many of the essential parts of their structure, they still agree by holding the same place in the ornithological economy of the countries they inhabit.

The sun-birds are peculiarly restricted to the tropics of Asia and Africa; but when we take the form as a family, we shall find it extending far beyond that range, and reaching on the one hand to the numerous islands in the Pacific Ocean, while in another direction a few members occur in South America and the adjacent islands, in both instances forming the exception in the amount of numbers; the form in the first being the one peculiarly taken up by the *Meliphagidæ*, or honey-suckers; in the latter by numerous and abundant species of humming-birds.

The humming-birds, although they want the wide gape and other accessories around the mouth provisional for capturing insects in flight, in form most closely resemble the fissirostral genera, being deficient in the members particularly adapted for perching, while they possess an extraordinary development of those proper for flight. The want of adaptation, however, in other members, prevents the wings being used to pursue an insect prey, though their great development is as necessary to the manner in which they feed, by hovering above the beautiful blossoms which afford a sustenance in part alike to them and to a host of minute insects, and also to perform the lengthened migrations which these species are known to undertake annually. In the sun-birds, or *Nectariniadæ*, we see no such extraordinary development of wing, and their legs and feet, or, in other words, their provisions for perching, are equal to those of the majority of the *Insessores*, and show at once a marked difference between the structure of the same parts in truly fissirostral birds, where they are always extremely weak, comparatively unfitted for perching or settling on the ground, and where, in fact, they are constructed upon that model which will be least incommodious to the bird in pursuing its prey with rapidity through the air, or in performing very long migrations. The nectariferous juices of flowers have also been considered as the chief food of the sun-birds, at least during certain seasons of the year; but we find the manner of seeking for these to be very different from the hovering flight of the humming-birds; the *Nectariniadæ* always perching first, and exhibiting more similarity, in passing from blossom to blossom, to the activity of some of our small warblers, rapidly examining the flowers of one plant, and immediately passing off to another, uttering, during the while, a shrill and impatient call. Neither do the species perform extensive migrations, at least where a continued flight has to be maintained. In the Old World the change of station is chiefly from the town and coast districts to the more exalted regions where it is possible a succession of food may be acquired; or, if the range is more extensive, it is performed over tracts, or coastwise, where resting-places may be found during its continuance. In both groups the bill and the tongue are inserted into the tubes, and withdraw from them the honey and the small insects which are attracted by it. In both the mechanism of the tongue is in different manners adapted for this mode of deriving nourishment, and in both are the members of the family extremely numerous, social in their habits, and probably intended in their respective countries as one of the means for the fructification of plants.

In their nidification the sun-birds present some difference from the humming-birds, though we, perhaps, know less about the nests and the places where their fabric is reared; the exquisite structure and curious small size of those of the latter being objects of request or curiosity even to many who do not generally take an interest in such productions. Many of the sun-birds breed in the clefts and hollows of worm eaten trunks of trees, where no nest possessing external interest is found;* others place the nest among thick bushes, and form it of the down of plants, covering it externally with lichens or fine mosses.* Of the nest of an Indian species Dr. Latham thus writes, upon the authority of General Hardwicke: "The nest, composed of fine downy materials mixed with a few dead leaves, is in shape nearly globular, about three inches in diameter, and at bottom runs to a point at least four inches beyond it; the entrance at the top, and on one side, next to the branch to which it is attached, has a kind of head or cover over the entrance." In most cases where we have any notice of them, the eggs are described as of a pale colour, bluish-gray, or reddish, with brown or greenish spots; in the humming-birds they are generally white. The nest of the *N. Goalparensis* is represented by Professor Royle as suspended, and having the hole or entrance near the upper part, the materials of which it is constructed being rather coarse. From these descriptions the character of the nests of the Indian species partakes more of those of the Arthotomi and tailor-warblers. Mr. Jerdon writes of the *C. Mahrattensis*: "I have seen the nest of this pretty little bird close to a house at Jaulnah. It was commenced on a thick spider's web, by attaching to it various fragments of paper, cloth, straw, grass, and other substances, till it had secured a firm hold of the twigs to which the web adhered, and the nest suspended on this was then completed by adding other fragments of the same materials; the hole is at the one side near the top, and has a slight projecting roof or awning over it."

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* Vaillant, Sucrier eblauisant, S. Velour.

THE SPLENDID SUN-BIRD.†

This is a large species, and certainly, when the male is seen in his full breeding-dress, one of the most gorgeously-dressed of the whole tribe. Le Vaillant found this bird in the country of the Great Namaqua, near the Fish River, but only during the season of incubation; so that it is probable that a more western locality may be its true and continuous habitation. It is introduced by Mr. Swainson in his "Birds of Western Africa," and specimens have been received, by the attention of Dr. W. Fergusson, from the vicinity of Sierra Leone. In the country of the Namaquas, the nest was placed in the worm-eaten trunks of mimosa trees, and contained from four to five entirely white eggs.

The total length of the adult male, measured from Sierra Leone specimens, is from five inches and a-half to five and three-quarters, being nearly an inch longer than the measurement given by Mr. Swainson. The back of the neck, back, shoulders, and upper and under tail-coverts, are brilliant golden-green, varying with every change of light; the head and throat are steel-blue, in some lights appearing as black, in others as rich violet; across the breast there appears in most lights a band of scarlet, but in some positions it appears as if banded with steel-blue, golden-green, or violet, and at times to be almost entirely composed of one of these tints: this is occasioned by the structure of the feathers; near the base the colour is of the metallic tints alluded to, but the tips of the plumules are lengthened into fine vermilion tips without barbs, which are so slender as sometimes to be entirely lost when seen against the dark tint of the feather lying beneath. On the sides of this beautiful bird spring two auxiliary tufts of pale lemon colour. The breast, belly, and flanks, wings and tail, are deep black, the latter edged with golden-green. In this species also the tail-coverts are of an unusual form, very nearly as long as the feathers of the tail, the webs very ample, loose, and unconnected. The legs, feet, and bill are black. The female, according to Le Vaillant, is entirely of an "earthy brown," paler beneath, tinted with olive on the wings and tail, the last having the lateral feathers bordered exteriorly with dirty white; the bill and feet blackish brown. The young resemble the female.

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* Vaillant, S. Oranga.

† Nectarinia Splendida.—Shaw.

THE HUMMING-BIRDS.*

The Humming-birds have been fairly characterised as fairy-like, and may be truly designated "the jewels of ornithology." They are the

> "Least of the winged vagrants of the sky."

How sweetly has Mary Howitt sung:—

The humming-bird! the humming-bird!
  So fairy-like and bright;
It lives among the sunny flowers,
  A creature of delight!

In the radiant islands of the East,
  Where fragrant spices grow,
A thousand, thousand humming-birds
  Are glancing to and fro.

Like living fires they flit about,
  Scarce larger than a bee,
Among the dusk palmetto leaves,
  And through the fan-palm tree.

And in the wild and verdant woods,
  Where stately morass tower,
Where hangs from branching tree to tree
  The scarlet passion flower.

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* Trochilidæ.

Where, on the mighty river banks,
La Plate or Amazon,
The cayman, like a forest tree,
Lies basking in the sun.

There builds her nest the humming-bird
Within the ancient wood,
Her nest of silky cotton down,
And rears her tiny brood.

She hangs it to a slender twig,
Where waves it light and free,
As the campanero* tolls his song,
And rocks the mighty tree.

All crimson is her shining breast,
Like to the red, red rose;
Her wing the changeful green and blue
That the neck of the peacock shows.

Thou happy, happy humming-bird,
No winter round thee lowers,
Thou never saw'st a leafless tree,
Nor land without sweet flowers!

A reign of summer joyfulness
To thee for life is given;
Thy food, the honey in the flower,
Thy drink, the dew from heaven.

How glad the heart of Eve would be,
In Eden's glorious bowers,
When she saw the first first humming-bird
Among the spicy flowers;

Among the rainbow butterflies,
Before the rainbow shone,
One moment glancing in her sight
Another moment gone!

Thou little shining creature,
God sav'd thee from the flood,
With eagle of the mountain land,
And tiger of the wood!

Who cared to save the elephant,
He also cared for thee,
And gave those broad lands for thy home,
Where grows the cedar-tree!

"Of all animated beings," says Buffon, "the humming-bird is the most elegant in form and most splendid in colouring. Precious stones and metals artificially polished, can never be compared to this jewel of nature, which has placed it in the order of birds at the bottom of the scale of magnitude—*maximè miranda in minimis*—while all the gifts which are only shared among others—nimbleness, rapidity, sprightliness, grace, and rich decoration—have been profusely bestowed upon this little favourite. The emerald, the ruby, the topaz, sparkle in its plumage, which is never soiled by the dust of the ground, for its whole life being aerial, it rarely lights on the turf. It dwells in the air, and flitting from flower to flower, it seems to be itself a flower in freshness and splendour; it feeds on their nectar, and resides in climates where they glow in perpetual succession; for the few which migrate out of the tropics during the summer make but a transitory stay in the temperate zones. They follow the course of the sun, advancing or retiring with him, and flying on the wings of the zephyrs, wanton in eternal spring."

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* In the extensive wilds of Demerara, at a distance of nearly three miles, you may hear this snow-white bird tolling every four or five minutes, like the distant convent bell. It is generally to be seen resting on the dried top of an aged mora tree.

The humming bird has indeed been universally beloved and admired by every lover of nature. Audubon compares it to the glittering fragment of a rainbow; the American Indians give it a name signifying a sunbeam, expressive of its brilliancy and rapidity of motion, and frequently wear it in their ears as a pendant; and the enthusiastic Alexander Wilson, in his history of its habits, makes it the subject of a poem, from which we cannot refrain extracting a few lines:—

"When the morning dawns, and the blest sun again
Lifts his red glories from the eastern main,
Then through our woodbines, wet with glittering dews.
The flower-fed humming-bird his round pursues;
Sips, with inserted tube, the honey'd blooms,
And chirps his gratitude as round he roams;
While richest roses, though in crimson drest,
Shrink from the splendour of his gorgeous breast.
What heavenly tints in mingling radiance fly!
Each rapid movement gives a different dye;
Like scales of burnish'd gold they dazzling show.
Now sink to shade--now like a furnace glow."

No sooner, indeed, has the returning sun again introduced the vernal season, and caused millions of plants to expand their leaves and blossoms to his genial beams, than the little humming-bird is seen advancing on fairy wings, carefully visiting every opening flower-cup, and, like a curious florist, removing from each the injurious insects that would otherwise ere long cause their beautiful petals to droop and decay. Poised in the air, it is observed peeping cautiously and with sparkling eye into their innermost recesses, while the etherial motion of its pinions, so rapid and so light, appear to fan and cool the flower without injuring its delicate texture, and produce a delightful murmuring sound well adapted for lulling the insects to repose. This then is the moment for the humming bird to secure them. Its long delicate bill enters the cup of the flower, and the protruded double-tubed tongue, delicately sensible, and imbued with a glutinous saliva, touches each insect in succession, and draws it from its lurking-place, to be instantly swallowed. All this is done in a moment, and the bird, as it leaves the flower, sips so small a portion of its liquid honey, that the theft, we might almost suppose, is looked upon with a grateful feeling by the flower, which is thus kindly relieved from the attacks of her destroyers. The prairies, the fields, the orchards and gardens, nay, the deepest shades of the forest, are all visited in their turn, and everywhere the little bird meets with pleasure and food. Its gorgeous throat in beauty and brilliancy baffles all competition. Now it glows with a fiery hue, and again it is changed to the deepest velvety black. The upper parts of its body are of resplendent changing green, and it throws itself through the air with a swiftness and vivacity hardly conceivable. It moves from one flower to another like a gleam of light, upwards, downwards, to the right, and to the left. In this manner it searches the extreme northern portions of America, following with great precaution the advances of the season, and retreats with equal care at the approach of autumn.

These birds do not alight on the ground, but easily settle on twigs and branches, where they move sideways in prettily-measured steps, frequently opening and closing their wings, pluming, shaking, and arranging the whole of their apparel with neatness and activity. They are particularly fond of spreading one wing at a time, and passing each of their quill-feathers through the bill, in its whole length, when, if the sun is shining, the wing thus plumed is rendered extremely transparent and light. They leave the twig, without the least difficulty, in an instant, and appear to be possessed of superior powers of vision, making directly towards a martin or a blue-bird, when fifty or sixty yards from them, and reaching them before they are aware of their approach. No bird seems to resist their attacks; but they are sometimes chased by the larger kinds of humble-bees, of which they seldom take the least notice, as their superiority of flight is sufficient to leave these slow-moving insects far behind them in the short space of a minute.

"Where," says Audubon, "is the person who, on seeing one of these lovely little creatures moving on humming winglets through the air, suspended as if by magic in it, flitting from one flower to another with motions as graceful as they are light and airy, pursuing its course over our extensive continent, and yielding new delights wherever it is seen;—where is the person, I ask of you, kind reader, who, on observing this glittering fragment of the rainbow, would not pause, admire, and instantly turn his mind with reverence toward the Almighty Creator, the wonders of whose hand we at every step discover, and of whose sublime conceptions we everywhere observe the manifestations in his admirable system of creation?"

Humming-birds in general may be said to inhabit chiefly the intra-tropical regions of America, including the West Indies; but that they are capable of sustaining a considerable reduction of temperature, and of spreading themselves into comparatively rigorous climes, is evident from the observations of Captain King, who, in his survey of the southern coasts, met with numerous examples of these diminutive creatures flying about in a snow storm, near the Straits of Magellan; and discovered two species in the remote island of Juan Fernandez. Two other hardy species have been long known to migrate during summer far into the interior of North America,—viz., the ruff-necked humming-bird (*T. rufus*), discovered during Cook's voyage in Nootka Sound, and since traced by Kotzebue to the 61st degree of north latitude, along the western shores; and the ruby-throated humming-bird (*T. colubris*), which was found breeding, by Mr. Drummond, near the sources of the Elk River, and is known to reach at least as far north as the 57th parallel.

The best and most ample history of these "feathered gems" may be gathered from the pages of Audubon and Wilson, while the superb adornment of their beautifully pencilled plumage, so rich in its varied combinations of lustrous green and gold, may be studied with advantage in the sumptuous pages of M. Lesson and Mr. Gould. They are of a most lively and active disposition, almost perpetually upon the wing, and darting from flower to flower with the busy, rapidity rather of a bee than a bird. In the uncultivated districts of the country, they inhabit the forests, but in peopled regions they flock without fear into the gardens, poising themselves in the air, while they thrust their long extensile tongues into every flower in search of food.

According to Bullock, they will remain suspended in a space so small, that they have scarcely room to move their wings, and the humming noise which they produce proceeds entirely from the prodigious velocity with which they vibrate those tiny organs, by means of which they will remain in the air almost motionless for hours together. An older writer, Firmin, a physician of Surinam, compares this action to that of the bee-like flies, which in still and sultry weather we often see hovering in the vicinity of still waters; and Wilson says, that when a humming-bird arrives before a thicket of trumpet flowers in bloom, he suspends himself so steadily that his wings become "invisible, or like a mist." They often enter windows, and after examining any fresh bouquets with which fair hands may have decked the table, they will dart like sunbeams out by an opposite door or window. During the breeding season, they become jealous of encroachments, and exhibit great boldness in defence of their supposed rights. When any one approaches their nest, they will dart around with a humming noise, frequently passing within a few inches of the intruder's head. A small species called the Mexican star (*T. cyanapogon*) is described by Mr. Bullock as exhibiting great intrepidity while under the influence of anger. It will attack the eyes of the larger birds, striking at them with its sharp, needle-like bill; and when invaded by one of its own kind during the breeding season, their mutual wrath becomes immeasurable, their throats swell, their crests, tails, and wings expand, and they fight in the air till one or other falls exhausted to the ground. Indeed, old Fernando Oviedo gives a still more alarming account of their fiery temper. "When they see a man climb ye tree where they have their nests, they flee at his face, and stryke him in the eyes, commuying, goying, and returnyng with such swiftness, that no man would ryghtly believe it that hath not seen it."

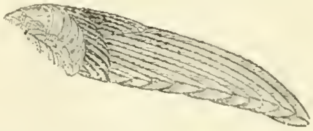
Various attempts have been made, with more or less of success, to rear these beautiful little birds in confinement. One which was captured by Wilson, though quite young, refused to take food, and in a few hours it could only just be detected that life remained. A lady, however, undertaking to be its nurse, placed it in her bosom, and as it began to revive, dissolved a little sugar in her mouth, into which she thrust its bill, and it sucked with avidity. In this manner it was brought up till just fit for the cage, and it lived for upwards of three months. It was supplied with loaf-sugar dissolved in water, which it preferred to diluted honey; and every morning it had fresh flowers sprinkled with the liquid, from one to another of which it hovered with great activity and spirit, as if in its native wilds; always expressing, by its motions and voice, great pleasure when fresh flowers were introduced to the cage. The space in which it was kept was surrounded with gauze, so as to prevent the bird injuring itself, and every precaution was adopted in order to keep it during the winter; but, unfortunately, it got at large into the room, and flying about, so injured itself that it soon afterwards died.

HEAD OF ORNISMIA ANGELÆ.

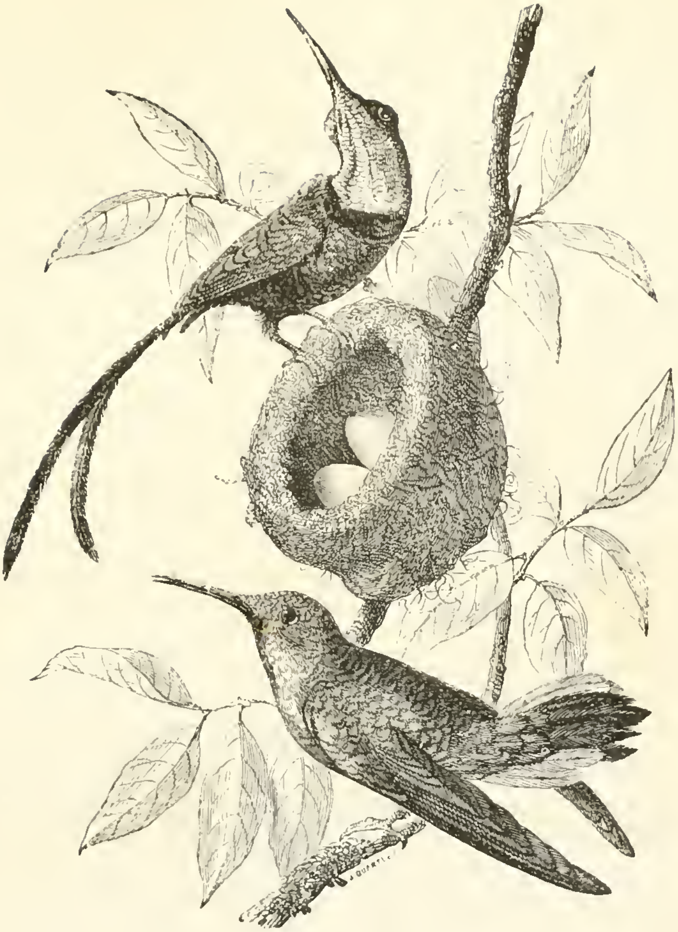
HEAD OF ORNISMIA LATIPENNIS.

HEAD OF ORNISMIA SUPERBA.

HEAD OF TROCHILUS ENSIFERUS.—BOISSONNEAU.


WING OF ORNISMIA LATIPENNIS.—LESSON.

The humming-bird is extremely susceptible to cold, and if exposed to it death speedily ensues. A beautiful male specimen was preserved by Wilson in 1809, which he put into a wire cage, and placed in a retired and shaded part of a room. "After fluttering about for some time," he says, "the weather being uncommonly cool, it clung by the wires, and hung in a seemingly torpid state for a whole forenoon. No motion whatever of the lungs could be perceived, on the closest inspection, though, at other times, this is remarkably observable; the eyes were shut; and, when touched by the finger, it gave no signs of life or motion. I carried it out to the open air, and placed it directly in the rays of the sun, in a sheltered situation. In a few seconds respiration became very apparent: the bird breathed faster and faster, opened its eyes, and began to look about, with as much seeming vivacity as ever. After it had completely recovered, I restored it to liberty; and it flew off to the withered top of a pear-tree, where it sat for some time dressing its disordered plumage, and then shot off like a meteor."



THE TOPAZ-THROATED HUMMING BIRD.*

Such is a representation of the male and female of one kind of these beautiful birds. The nest is usually attached to the upper side of some horizontal branch; but sometimes the branch is inclined, as in the present instance. The nest is about an inch in diameter, and as much in depth, and is formed externally of a species of gray lichen, the portions of which are said to be glued together by the saliva of the bird. Within this outer coat is a padding of the cotton or down of plants, smoothly arranged, and lined with a yet finer layer of silky fibres; the eggs are two, and of a transparent fineness. The young ones take their food by inserting their bills into the mouths of the parent birds.

This is a large species, and, without exception, one of the most splendid of the whole race. In every part the plumage is composed of the scaly formed feathers, which are always present where a metallic lustre prevails; and in every position its brilliant colours receive a variation of tint differing from that last seen, and superior in splendour to anything with which we could compare it.

The length of this bird, not including the long centre tail-feathers, is five inches and a half, these exceed the others by nearly three inches; the colours of the whole plumage of the body may be said to be of a rich brownish-orange, in some lights appearing of the deepest lake, and in others of a brilliant ruby colour tinted with golden; on the lower surface the golden lustre is most prevalent above the deep shade and ruby tint; the gorget is alternately of a topaz-yellow or emerald green, and it is surrounded by a shade of nearly velvet-black, which gradually assumes a purple tint, and shades into the colour of the body; the wings are very long and powerful; the tail is above of a golden-green, shaded with red, below of a bright chestnut; in form it is rather rounded, and the two centre feathers make it appear sometimes very lengthened, sometimes forked, according to their position; the tarsi are feathered to the division of the toes.

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* Trochilus Pella.—Linn.

The female is somewhat less than the young males; the centre tail-feathers are slightly larger; the prevailing colour of the plumage is bright emerald green, with metallic lustre, but which is somewhat diminished by a gray tint which pervades the whole; the gorget is marked by brown feathers, which have a golden lustre when placed in the light, but is not very distinctly defined; the outer tail-feathers are of a dull green, the next pair are of a brilliant violet, the others of a bright chestnut.

The young have not the long feathers in the tail, the two centre plumes of which exceed the others by about one-eighth of an inch; the plumage of the upper parts is of a bright green, with the ruby tints appearing at intervals; the under part has more of the red colour, and is shaded with green and bright orange; the gorget is not yet apparent, but the space for it is clearly seen.

THE RUBY-THROATED HUMMING-BIRD.*

Mr. Abbot, of Savannah, in Georgia, whose observations in reference to natural history subjects in that country have been careful and long-continued, states that the humming-bird of the United States makes its first appearance there from the south towards the close of March. As it passes on to the north, and to the interior of Canada, where it is found in great numbers, it traverses extensive regions of lakes and forests, which are thronged with enemies far its superior in magnitude and strength; yet it finds protection in its very minuteness, in the rapidity of its flight, which almost eludes the eye, and in that admirable instinct and daring courage by which it is characterised. In these we perceive the reason why an all-wise Providence has made this little hero an exception to the rule which prevails most generally,—that the smallest species of a tribe are the most prolific. The eagle lays one and sometimes two eggs; the crow five; the small European wren fifteen; and the humming-bird only two; and yet it is immeasurably more numerous in America than is the wren in Europe.

Towards the close of April the humming-bird usually arrives in Pennsylvania, and about the 10th of May proceeds to build its nest. This is generally fixed on the upper side of a horizontal branch, though cases are recorded in which it has been attached by the side of an old moss-grown trunk, or to a strong rank stalk or weed in a garden; but such cases are rare. If it builds in the woods, it very often chooses a white oak sapling on which to rest the nest; while in the orchard or garden, a pear-tree answers the same purpose. The nest is about an inch wide and deep. In one which has been completely finished with the best materials, it will probably be found that the outward coat is formed of small pieces of the lichen that grows on old trees and fences, glued together with a saliva which the bird exudes, which gives firmness and consistency to the whole, and serves also to exclude moisture. Within this are thick matted layers of the wings of certain flying seeds, which is, perhaps, lined with some downy materials supplied by other plants. The base of the nest is continued round the stem of the branch to which it closely adheres; and when viewed from below, appears as a mere mossy knot or accidental protuberance. The eggs are two in number, of a pure white colour, and of equal thickness at both ends. Should any one approach the vicinity of the nest, the parent birds dart around, with a humming sound, passing frequently within a few inches of the head of the intruder; and should the young be newly hatched, the female will resume her place on the nest, even while the visitor stands within a yard or two of the spot. A short time before the young leave the nest, they may often be seen thrusting their bills into the mouths of their parents, and sucking what they may have brought them to eat.

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* Trochilus Colubris.—Wilson.

The humming-bird manifests great partiality for tubular flowers, and its manœuvres among the blossoms of the trumpet-flower are very interesting. Wilson, who has often watched them, states, that when they have arrived before a thicket of these plants, which are, perhaps, in full bloom, he poises himself in the air for the space of two or three seconds, and the observer can plainly detect the pupil of his eye looking round with great quickness and circumspection, while the glossy, golden green of his back, and the fire-like hue of his throat dazzling in the sun, form altogether a most interesting appearance. The position into which his body is thrown, while in the act of thrusting his slender tubular tongue into the flower to extract its sweets, is also very curious. When he alights, which he does frequently, he always prefers the small dead twigs of a tree or bush, where he arranges his plumage with great dexterity.

Some of the humming-birds are not only remarkable for the brilliancy of their colours, but for the tufts and plumes by which they are adorned. Of these, therefore, we shall give some instances.

THE TUFTED-NECKED HUMMING-BIRD.*

This exquisite little creature is a native of Cayenne, Brazil, and Guiana. It prefers dry, arid plains, clothed with a scanty and bushy vegetation. Its head is ornamented with a crest of red feathers, and from the sides of the neck proceeds a tuft composed of twelve or fourteen feathers of the same colour, ending each in a broad tip of clear shining green. The chest is dotted with scaly feathers of a bright emerald-green, paler at its edges. The upper parts are golden-green, the lower greenish-brown; the tail is large, having the centre feathers green, the others red, with a purple gloss. The female wants both crest and throat plumes, but in the metallic richness of her tints is hardly inferior to her mate.

THE TROCHILUS GOULDII.

This is a most elegant species, named after the justly celebrated naturalist to whom we owe so many delightful specimens of humming birds, an acquaintance with numbers previously unknown to ornithologists, and numerous descriptions of great clearness and accuracy. He says: "The native district of this splendid species is unknown. The forehead, throat, and upper part of the breast are of the most brilliant green, the feathers of a scaly form; from the crown springs a beautiful crest of bright chestnut feathers, of a lengthened form, and capable of being raised at pleasure; the back and upper parts are golden-green, crossed upon the rump with a whitish band; the wings and tail are brownish-purple, the latter having the centre feathers tinged with green. The neck tufts are of the most splendid kind, and have a chaste but brilliant effect: they are composed of narrow feathers of a snowy whiteness, the tips of each having a round spot of bright emerald green, surmounted by a dark border."

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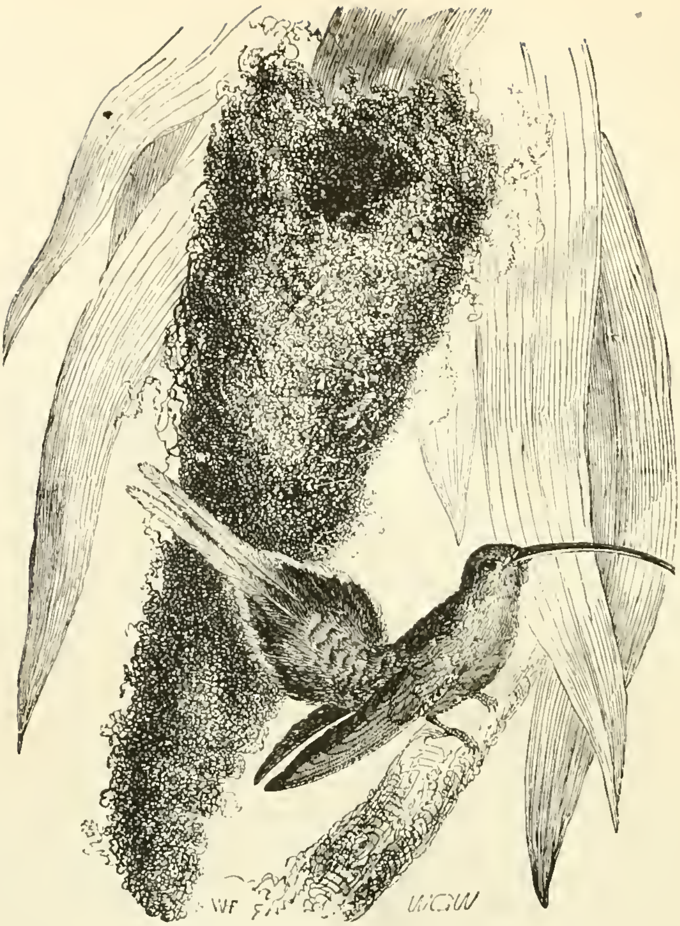
* Trochilus Ornatus.



THE SUPERCILIOUS HUMMING-BIRD.*

This species is found both in Guiana and Brazil. The bill is long and bent, considerably dilated at the base, and, as in all the genus, has the under mandible entering when closed within the upper one; the base of a bright orange. The upper plumage of the bird is of a bronzed green; two reddish white lines mark the cheeks; the one more in the shape of a spot above the eye, the other in a line from the corner of the mouth; all the lower parts are of a brownish white.

The tail, without the long feathers, is wedge-shaped, each feather widening towards the tip, and then ending in a triangular sharp point; the long feathers keep the breadth of the others for the same length, when they suddenly become narrow, and form the distinguishing marks of the male. The colour of the tail is bronzed green, shaded nearly to a rich black at the ends, which terminate in a narrow border of white; the projecting ends of the long feathers are also white.

On presenting a humming-bird to an ordinary observer, the first exclamation is, "What a beautiful creature!" "But what large wings it has!" usually follows. Such, indeed, is the case, and, in most instances, the size of the wings and strength of their quills are entirely disproportioned to our ideas of symmetry in a creature clothed with feathers; but on comparing them with the other parts of its frame and its necessities, their design and utility are at once apparent.

The form of the wings is very similar to those of the swift, whose power of flight is well known. In general they exceed the tail in length, unless when that member is extraordinarily developed. The exterior outline of the wing is very much curved, as will be observed in the figure of one of the *Ornismia latipennis*, and the first quill is always longest, the others gradually shortening, The secondaries are very short, and the lesser wing-coverts occupy very little room. The plumelets of the quills are narrow and compact, firmly united together, forming a substance, when used, almost like a thin plate of whalebone, and which, by presenting resistance to the air when struck, and allowing no part to pass through the webs, as in nocturnal feeding birds, produces that humming sound which is heard during their suspension, and whence their common name has been derived. In all, the shafts are remarkably strong and elastic; but in a few species, called sickle or sabre-winged humming-birds, they are developed to an extraordinary degree at the base, and nearly equal the breadth of the plume.

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* Trochilus Superciliosus.

The reason for such a structure is obvious. Its great purpose is the power of vigorous and sustained flight. Hence all the other parts not then called into action are very slender, almost frail; the tarsi are short, and the feet small. Here the wisdom and benevolence of the great Creator are manifest; for the food of these birds is derived from the sweet nectar of flowers, or from insects which must either be taken during a rapid flight, or withdrawn from the deep tube or cup-shaped recesses of blossoms which grow and hang in every direction, and which it would be impossible to reach except by suspension above or under them.

But this is not all. Another great reason for their possessing organs of such power is, to enable them to pass safely through the migrations and the long flights which are sometimes necessary for their preservation, and during which they have often to withstand a passing gale, showers, or even the rigour of a snow-storm. The beautiful climes which they inhabit are, at seasons, subject to perpetual rains, which drench and almost inundate their abodes; or to hurricanes that, in a few minutes, leave only a wreck of all that was before so magnificent and luxuriant; and they pass, by these means, before the dangerous season, to districts where the reparation of a previous wreck is proceeding with all the magical rapidity of tropical vegetation.

The bill is always an important organ in birds. This family presents great modifications in form, which will be observed on an examination of the figures now given. In a few species the edges of the mandibles are toothed; and in one, this member is furnished with recurved, saw-like teeth, a manifest provision for more effectually securing some peculiar prey. Thus, when Swainson is describing the recurved-billed humming-bird, he says, "The extraordinary formation in the bill of this beautiful little creature is without parallel in any land-bird yet described. It is almost impossible to conjecture rightly the use of this singular formation; but it appears to me not improbable, that the principal sustenance of the bird may be drawn from the pendant bignonaceæ, and other similar plants, so common in South America, whose corollæ are long, and generally bent in their tube; and so, the nectar being at the bottom, could not be reached either by a strait or a curved bill, though very easily by one corresponding to the shape of the flower."

The tongue of humming-birds is very long, retractile, and capable of being darted out with considerable force. It is said by Brisson and Lesson to be composed of two muscular tubes joined together for the greater part of their length, towards the tip broadened or swelling, and terminating in a spoon-like point on the upper surface.

We have alluded to some of the forms and decorations of those exquisite creatures, but the diversities are too numerous for particular description. As a contrast to the ruby-throated and topaz-throated, for example, some have a throat of brilliant white, descending a little like a lady's tucker, but, as if to compensate for this simplicity of colour, there is on each side an emerald sheen, and all around is set, as it were, with gems of the same splendid hue. In some instances this radiant tint adorns the stomacher, and is heightened in effect by the richest ultramarine, which is profusely scattered over the head and the long feathers of the tail. Other cases there are in which the same part of the body is arrayed in feathers having the form of a lady's ruff or tippet, set off, at the sides, by the most brilliant hues. But there is an almost endless diversity: thus, the head and wings are sometimes plain in hue, while the body is of the brightest mingled dyes; at other times, the tails are especially resplendent, the vivid colours passing over the whole surface, or broadly edging them, and leaving in the centre a streak or space of white; tufts of dazzling brilliancy not unfrequently adorn the head, or fall downwards from the beak; while the legs are like those of other small birds, except that they are unusually short, or emerge from little bushes of small feathers, technically called "boots," which are either white, black, or of various hues. To this brief and general description, it may be added, that no fewer than three hundred and twenty-five species of humming-birds are now known, although the celebrated Linnæus was acquainted with extremely few; that the bills vary in different individuals, those of the young being longer than those of adult birds; and that the plumage of the sexes is often widely different, the female being devoid of the rich lustrous green on the throat, and having only a rudiment of white boots, which are both so conspicuous in the males.

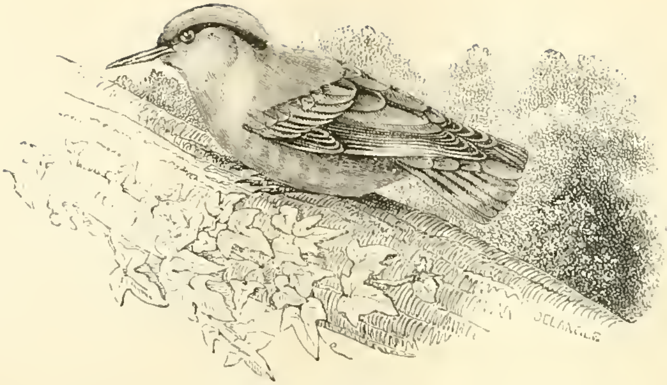
To see these "winged gems" in all their beauty and splendour, the great archipelago of islands between Florida and the mouths of the Orinoco should be visited, as well as the mainland of the southern continent until it passes the Tropic of Capricorn. That, indeed, is no ordinary region for natural beauties. As the voyager approaches the land, he beholds, perhaps, immense ridges of primitive mountains, traversed by deep ravines, and rising in succession to the very boundary of his vision. His eye may be delighted, too, by the brilliant tints of the foliage which covers these lofty heights, and by the dazzling insects which flutter about his ship, indicating the stores of animated nature. As he lands, and bends his way to the rocky woods, he may well be overwhelmed by his first sensations on beholding the productions of a tropical climate in their native soil. Plants, reared in England only at great expense, and which even then attain only a puny and uncharacteristic form, flourish around him in all the vigour and luxuriance of their perfect existence. Surrounded by lofty airy cassias; broad-leaved, thick-stemmed cecropias; thick-ermined myrtles, large-blossomed bignonias, climbing tufts of the honey-bearing paullinias, far-spreading tendrils of the passion flower, and of the richly-flowering coronilla, above which rise the waving summits of Macauber palms, he seems to realise the fable of the garden of the Hesperides. The glory of these southern forests, the endless variety of forms, the contrasts of colour and size, the brilliant blossoms of even the largest trees; the scarlet, purple, blue, rose-colour, and golden-yellow, blending profusely with every possible shade of green, language is altogether unequal to describe. Here branches may be observed covered on the under side with a hoary down, which in the heat of the day they turn up to the sun, so that whole patches of the surface seem covered with rich white blossoms; while, strikingly contrasted, there appears the coral tree, whose spikes of rich scarlet blossoms stand erect, rivalling in size those of the horse-chestnut of our own spring-time, and giving to the surface a glow of the brightest red; or the yucca, with its tulip-like flowers of the most vivid hues. There, moreover, are all the varieties of the cactus tribe, of which one of the most splendid is the night-blowing cereus, a flower of surpassing beauty; for its blossoms are nearly a foot in diameter, and the outer petals of a dark brown, while the inner ones are of a splendid yellow, which gradually shades off to the most brilliant white.

"Soft roll your incense, herbs, and fruit, and flowers,
In mingled clouds to Him whose sun exalts,
Whose breath perfumes you, and whose pencil paints."

One season, too, is peculiarly favourable. In the months of July and August, when the tree denominated *bois immortel* yields an abundance of bright red blossoms, which stay on its branches for several weeks, the different species of humming-birds are very plentiful; then, too, they buzz like bees around the rich blossoms of the wallaba tree; indeed, there is scarcely a flower in the interior, or on the sea-coast of the isles they inhabit, which is not frequently visited by these radiant beings. They may be observed, as soon as the sun is risen, fluttering about the brilliant petals, but without ever lighting upon them. So rapid, however, is the motion of their wings, that only the glittering, and not the colours of them, can possibly be discerned. And as they pass onwards, now perhaps within a yard of the observer's face, yet gone in an instant, they look indeed like winged but changing gems—now a ruby, now an amethyst, now an emerald, and anon like glowing and burnished gold.

One species alone never shows its beauty to the sun; and were it not for his lovely colours, the naturalist would be almost disposed to remove him from the tribe of humming-birds, and to class him with the goat-suckers, because of his habits. He is the largest and longest of the humming-birds, and is of mingled red and a changing gold green, except the head, which is black; as are also two long tail-feathers, which cross each other. He is never found on the sea-coast or where the water is salt, or about the trees of a forest, except fresh water be there. He keeps by the side of the woody fresh-water rivers and dark and lonely creeks, leaving his retreat before sunrise to feed on the insects hovering over the water, returning to it as soon as the rays of the solar orb cause a glare of light, continuing sedentary all day long, and only emerging again a short time after sunset. What a singular exception does he present to the general habits of his race!

We conclude our account, which we should gladly have extended, with one fact. A young man, a few days before his departure from Jamaica, surprised a female humming-bird in the act of incubation, caught it, removed the branch on which the nest was, and carried them very carefully on board the ship. The little creature became sufficiently tame, during the passage, to suffer herself to be fed with honey and water, and actually hatched her offspring; but she died at the close of the voyage. Two young ones, however, survived it, and came into the possession of Lady Hammond and Sir Henry Englefield; they were sufficiently tame to take honey with their bills from the lady's lips; but one speedily died, and the other only lived two months after its arrival.



THE NUTHATCH.*

The weight of this bird is nearly an ounce; the length, five inches and three-quarters, and the expanse of the wings nine inches. The tints of the female are weaker than those of the male, especially about the sides and thighs.

This species inhabits Europe and Asia, and seems to be little affected by the influence of climate. In Britain, as in most other countries, it is stationary, but local, and chiefly prefers wooded and enclosed situations, frequently selecting the deserted habitation of a woodpecker for its nest. In this case, the entrance to the hole is first contracted by a plaster of clay or mud, to exclude larger birds, and leaving only sufficient room for itself to pass in and out. The male and female jointly labour at the construction of the nest, which usually consists of dead leaves and moss heaped together without much order, and sometimes lined with the dust of the decayed tree in which the nest is placed. The number of the eggs is generally six or seven, and they are of a dirty white with dusky spots, being scarcely distinguishable from those of the greater titmouse. If the plaster at the entrance be destroyed when there are eggs in the nest, it is speedily replaced.

During incubation, the female is assiduously attended by the male, who regularly supplies her with food. Though easily driven from her nest at other times, she sits on her eggs with great pertinacity, striking the invader with her bill and wings, and hissing like a snake; and after every effort has been practised in vain, she will rather suffer herself to be taken than desert her charge. The eggs are hatched in May; and there is rarely more than one brood in the season. After the young can provide for themselves, the family separates, and all seek retirement, though they are occasionally observed to mingle with titmice and woodpeckers.

Although the nuthatch spends much of its time in climbing or creeping on trees, its motions are nimbler than those of the sparrow, as well as smoother and more connected, for it makes less noise in flying. In climbing it is more expert than the woodpecker, for it runs up and down the tree in all directions. When employed in breaking a nut, its favourite position is with the head down. In the autumn, it is no uncommon thing to find in the crevices of the bark of an old tree a great many broken nutshells, the work of this bird, which repeatedly returns to the same spot for this purpose. When it has fixed the nut firm in a chink, it turns on all sides to strike it with the most advantage. This with the common hazel-nut is a work of some labour, but it strikes a filbert with ease. Whilst at work, it makes a rapping noise, which may be heard at some distance. In default of nuts or seeds, this bird searches for insects and their larvæ among moss or old trees, or walls, thatch, &c. In winter it picks the larvæ of beetles from under the bark of trees, and has recourse to the magazine of nuts, and the seeds of sun-flower.

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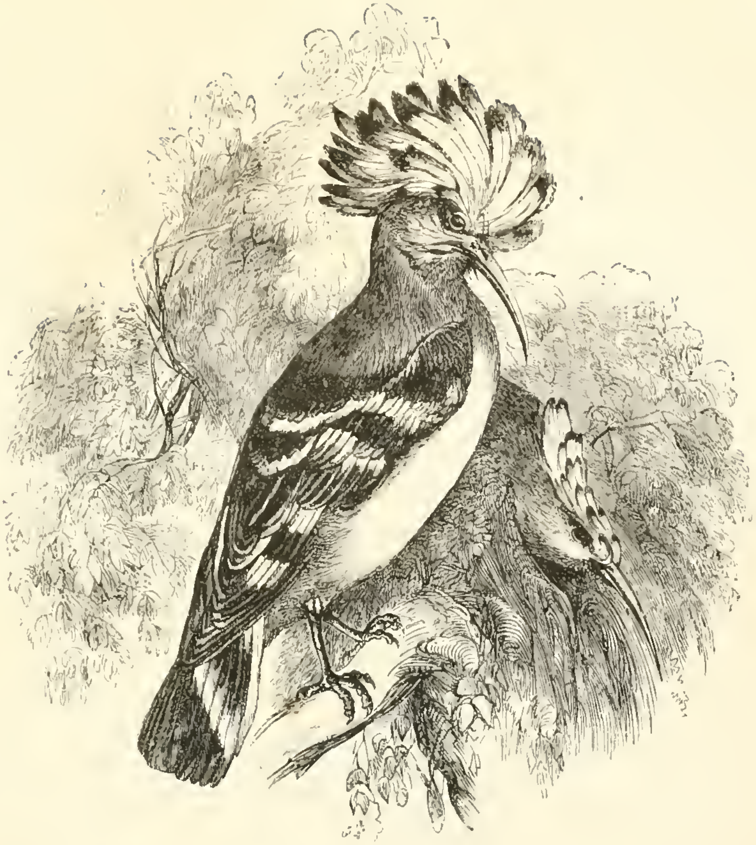
* Sitta Europæa.



THE HOOPOE.*

In concluding our exposition of the tenuirostral tribes, we now approach the *Hoopoes*, in close approximation to which is placed the genus *Fregilus* of Cuvier, containing the *Corvus graculus*, or red-legged crow of British writers. It is, in truth, so nearly allied to the Alpine crow (*C. pyrrhocorax*), or *choucard des Alpes*, both in structure and habits, and is so often seen in company with that species, that wherever the one may be placed, the other should not be far distant. M. Temminck, indeed, places them in the same genus, although the bill of the red-legged bird, or Cornish chough, is longer than the head, more subulate, and slender at the point, and without any notch. Cuvier regards the *Corvus affinis* of Latham, and another species from New Holland, as both belonging to the genus *Fregilus*.

The true hoopoes (*genus Upupa*) are all distinguished by a crest upon the head, composed of a double row of lengthened plumes, and capable of being raised at pleasure. The only European species (*U. epops*.—Linn) is a summer bird of passage on the continent, where it travels northward as far as Sweden. It never breeds in Britain, though it sometimes accidentally occurs there. One was sent to London a few years ago from the county of Fife. This bird is called *bubbola* by the Italians, most likely from its peculiar cry. It keeps itself concealed among the trees; but is constantly heard repeating the syllable *bu, bu, bu, bu, bu*, with such a strong sonorous voice, that it may be heard at a great distance. Its song, properly so called, is only uttered during the honeymoon.

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* Upupa epops.

Although the hoopoe lives and builds in woods, it may be often seen in search of insect food, in fields and pastures. The nest is generally placed either in the natural hollow of a tree, or in the deserted excavation of a woodpecker. It is composed outwardly of feathers, and is lined with the hair of cows and horses. The eggs are grayish-white, finely spotted with brown. This bird is very common in Egypt. A nearly allied species (*U. Capensis*) is found at the Cape, and occurs also in the East Indies; but we presume M Savi is in error when he says the genus is likewise known in America. In this bird the frontal plumes are developed very remarkably; its plumage is white, with a gray tinge.

White remarks in his Natural History of Selborne: "The most unusual birds I ever observed in these parts were a pair of hoopoes, which came several years ago in the summer, and frequented an ornamented piece of ground, which joins to my garden, for several weeks. They used to march about in a stately manner, feeding on the walks, many times in the day, and seemed disposed to breed in my outlet, but were frightened and persecuted by idle boys, who would never let them be at rest."

FALCULIA PALLIATA.

PROMEROPS CAPENSIS.

FREGILUPUS CAPENSIS.

ZYGODACTYLI, OR SCANSORES.

ORDER III.—THE CLIMBING BIRDS.

The Third Order of birds is composed of those whose external toe is directed backwards, like the thumb, whereby a more solid support is gained. Of this power some of the genera avail themselves, by climbing and hanging on the trunks of trees: hence they have been named *Scansores*, Climbers, though, strictly speaking, the term does not apply to all of them, and many birds climb that are not placed in this order. Such, for example, are the Creepers. In some instances, the power of grasping and holding is very great. Another name for them is *Zygodactyli*, or yoke-footed.

The birds of this order generally build in holes of trees; their power of flight is not considerable; their food, like that of birds in the preceding order, consists of insects and fruits, accordingly as their bill is more or less strong. Some, as the woodpeckers, have peculiar means of obtaining food.

THE JACAMARS.*

These birds are nearly allied to the kingfishers in certain respects, as in their elongated, sharp, quadrangular bill, and in their short feet, whose anterior toes are, for the most part, united. But these toes have not exactly the same formation as in the kingfishers; the plumage is not so smooth as that of those birds, and has always a metallic lustre. They live solitarily in humid woods, feed on insects, and build their nests on low branches.

The American species have the bill larger than the others, and quite straight.

THE CUCKOOS.

In the genus *Cuculus* of Linnæus were originally placed a number of different insectivorous birds, commonly called cuckoos, which agreed in the general form of the feet, the lengthened tail, the bill of medium size, rather deeply cleft, somewhat compressed, and slightly curved. But they have since been formed into numerous minor groups, the most marked and conspicuous of which we shall here briefly notice.

The true cuckoos † have the bill of moderate strength, the tarsi short, and the tail of ten feathers. As an example, we name our British species, *C. canorus*, so remarkable for its singular and somewhat anomalous habit of depositing its eggs in the nests of other birds, a fact now well known, but to which we shall briefly refer. The nest of the hedge-sparrow (*Accentor modularis*) is that most usually chosen in the south of England; that of the yellow-hammer, the wagtail, and the meadow titlark, being, however, likewise devoted to the purpose. "In Northumberland," says Mr. Selby, "constant experience tells me, that the nest of the last-mentioned bird is the one almost always chosen. Taking advantage of the absence of its dupe during the time of laying (which generally occupies four or five days), the cuckoo deposits its egg among the rest, abandoning it from that moment to the care of the foster-parent. As the same period of incubation is common to both birds, the eggs are hatched nearly together, which no sooner takes place than the young cuckoo proceeds instinctively to eject its young companions, and any remaining eggs, from the nest. To effect this object, it contrives to work itself under its burden (the back at this early age being provided with a peculiar depression between the shoulders), and shuffling backwards to the edge of the nest, by a jerk rids itself of the incumbrance; and this operation is repeated till, the whole being thrown over, it remains sole possessor. This particular tendency remains for about twelve days, after which the hollow place between the shoulders is filled up; and when prevented from accomplishing its purpose till the expiration of that time, as if conscious of inability, it suffers its companions to remain unmolested."

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* Galbula.—Bress.

† Cuculus.—Cuv.

Various supposed reasons have been assigned for this anomalous, and we might almost say unnatural, instinct. Some have attributed it to the displacement of certain viscera (the gizzard is said to be situate further back than in most other birds), which unfits the cuckoos for the purposes of incubation, while others imagine that the early period at which they migrate from this country (they are generally off by the beginning of July) makes it necessary that they should leave their offspring to the care of foster-parents. But anatomical investigation has not proved anything sufficiently peculiar in their structure to warrant the first conclusion; and as to the second, it seems to us not so much a deduction from a regulating and causative fact in their history, as the statement of an additional circumstance which renders that history still more singular, and which naturally leads to the question, not easily answered, of why do they migrate so early? In short, we know nothing at all about the matter, further than that the cuckoo of Europe, like the *Emberiza pecoris* or cow-bunting of America, always lays eggs, but never hatches them. It may be a practice common to several species, but the rare black and white spotted cuckoo, *Cuculus Pisanus*, Gm., an odd name for an African bird which happened once upon a time to visit Tuscany, is stated by the authors of the *Storia degli Uccelli* to have *built a nest* in the woods of Pisa, and *reared four young ones.* This species is extremely rare in Europe. It is known, however, in the Genoese territory, and the young have been occasionally killed in the south of France. Many beautiful cuckoos are found in foreign countries.

"I had an opportunity," says a naturalist, "of witnessing a singular fact in the case of a young cuckoo which was hatched in the nest of a water wagtail, who had built in some ivy on a wall close to my house. It required the united efforts of both the old birds from morning to night to satisfy his hunger, and I never saw birds more indefatigable than they were. When the young cuckoo had nearly arrived at his full size, he appeared on the little nest of the water wag-tail, 'like a giant in a cock-boat.' Just before he could fly he was put into a cage, in which situation the old birds continued to feed him, till by some accident he made his escape, and remained in a high elm tree near the house. Here the water wagtails were observed to feed him with the same assiduity for at least a fortnight afterwards."

The following circumstances occurred at Arbury, in Warwickshire, the seat of Francis Newdigate, Esq., and was witnessed by several persons residing in his house. The particulars were written down at the time by a lady, who bestowed much time in watching the young cuckoo, and the fact is given in her own words:—"In the early part of the summer of 1828, a cuckoo, having previously turned out the eggs from a water wagtail's nest, which was built in a small hole in a garden wall at Arbury, deposited her own egg in their place. When the egg was hatched, the young intruder was fed by the water wagtails, till he became too bulky for his confined and narrow quarters, and in a fidgetty fit he fell to the ground. In this predicament he was found by the gardener, who picked him up, and put him into a wire cage, which was placed on the top of a wall, not far from the place of its birth. Here it was expected that the wagtails would have followed their supposititious offspring with food to support it in its imprisonment—a mode of procedure which would have had nothing very uncommon to recommend it to notice. But the odd part of the story is, that the bird which hatched the cuckoo never came near it; but her place was supplied by a hedge-sparrow, who performed her part diligently and punctually, by bringing food at very short intervals from morning till evening, till its uncouth foster-child grew large, and became full feathered, when it was suffered to escape, and was seen no more: gone, perhaps, to the country to which he migrates, to tell his kindred cuckoos (if he was as ungrateful as he was ugly when I saw him in the nest) what fools hedge-sparrows and water-wagtails are in England." It may possibly be suggested, that a mistake has been made with regard to the sort of bird which hatched the cuckoo, and that the same bird which fed it, namely, the hedge-sparrow, hatched the egg. If this had been the case, there would have been nothing extraordinary in the circumstance; but the wagtail was too often seen on her nest, both before the egg was hatched, and afterwards feeding the young bird, to leave room for any scepticism on that point; and the sparrow was observed feeding it in the cage afterwards by many members of the family daily.

In April the cuckoo shows his bill;
In May he sings both night and day:
In June he altereth his tune;
In July away he'll fly;
In August go he must.

This bird has long been one of the favourites of the poets. Thus John Logan sings sweetly:—

Hail! beauteous stranger of the grove!
  The messenger of Spring!
Now Heaven repairs thy rural seat,
  And woods thy welcome sing.

What time the daisy decks the green,
  Thy certain voice we hear;
Hast thou a star to guide thy path,
  Or mark the rolling year?

Delightful visitant! with thee
  I hail the time of flowers,
And hear the sound of music sweet.
  From birds among the bowers.

The schoolboy wandering through the wood,
  To pull the primrose gay,
Starts—the new voice of Spring to hear,
  And imitates thy lay.

What time the pea puts on its bloom,
  Thou fliest thy vocal vale;
An annual guest in other lands.
  Another Spring to hail.

Sweet bird! thy bower is ever green,
  Thy sky is ever clear;
Thou hast no sorrow in thy song.
  No Winter in thy year.

O could I fly, I'd fly with thee!
  We'd make, with joyful wing,
Our annual visit o'er the globe,
  Companions of the Spring!

Nor less charming is the address of Wordsworth to this bird:—

O blithe new comer! I have heard.
  I hear thee and rejoice;
O Cuckoo! shall I call thee bird,
  Or but a wandering voice?

While I am lying on the grass,
Thy two-fold shout I hear,
That seems to fill the whole air's space,
As loud far off as near.

Though babbling only to the vale
Of sunshine and of flowers,
Thou bringest unto me a tale
Of visionary hours.

Thrice welcome, darling of the Spring!
Ev'n yet thou art to me
No bird; but an invisible thing,
A voice, a mystery,

The same whom in my schoolboy days
I listened to: that cry
Which made me look a thousand ways,
In bush, and tree, and sky,

To seek thee did I often rove
Through woods and on the green;
And thou wert still a hope, a love;
Still longed for, never seen.

And I can listen to thee yet,
Can lie upon the plain,
And listen till I do beget
That golden time again.

THE GILDED CUCKOO.*

This beautiful bird inhabits the country above the Cape of Good Hope, being extremely common in Caffraria and Namaqua-land. The male utters a cry similar to the word *di-di-di-dric,* whence has arisen one of its names. Vaillant states that his servant, Klaas, shot 210 males, 130 females, and 103 young ones, in all 443, and that numbers more might easily have been procured; adding, " besides which, eighty-three of their eggs in as many nests belonging to insectivorous birds, were obtained. Although this bird (the *didric*) be so common, if not in the immediate environs, yet about one hundred leagues from Cape Town, it was scarcely known in Europe before my voyages, and in France there was only one mutilated and badly preserved specimen of it to be seen in the Royal Museum at Paris. I myself brought over one hundred and fifty males and females, as well as young ones, which are now exhibited in the chief cabinets of Europe. To this beautiful species also I am indebted for my chief knowledge of the cuckoo family. From the facility I had of leisurely and successfully observing its manners, I always entertained the hope that I should one day surprise a female *didric* in the act of depositing its egg in the nest of another bird; but having been disappointed in this respect, I began to imagine that my ignorance on this point would never be removed, when one day having killed a female of this species, and wishing to introduce into its throat a plug of hemp, according to my custom, after bringing down a bird, in order to prevent the blood from staining its plumage, I was not a little surprised, on opening its bill for that purpose, to find in its throat an entire egg, which I knew immediately, from its form, size, and beautiful whiteness, to belong to the *didric.* Delighted at length, after so many useless efforts, at having obtained a confirmation of my suspicions, I loudly called my faithful Klaas, who was only a few paces distant from me, to whom I imparted my discovery with much pleasure, as he had used his best exertions to second my views. Klaas, on seeing the egg in the bird's gullet, told me, that after killing female cuckoos, he had frequently observed a newly-broken egg lying upon the ground near where they had fallen, which he supposed they had dropped in their fall, being at that moment ready to lay. I recollect very well that when this good Hottentot brought me the fruits of his sports, he frequently remarked, as he pointed to the cuckoos, 'This one laid her egg as she fell from the tree.' Although I was convinced from this circumstance, that the female cuckoo deposits her egg in the nests of other birds, by conveying it in her beak, I was desirous to collect what facts I could on the subject. Klaas and I therefore began to shoot as many cuckoos as we could meet with, which accounts for the great number of this species we procured. However, among all the specimens there occurred only one instance similar to that which I just mentioned, namely, that of a second female, which was transporting her egg in her mouth like the former."

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* Cuculus Auratus.

In length the gilded cuckoo is about seven inches; the plumage above is rich glossy green with golden reflexions; the head is marked with fine small stripes of white, with which the secondary quills and many of the wing coverts are tipped; the under parts are white; the tarsi yellow. In the female, the golden green is changed for a reddish gold colour, and the stripes on the head are more obscurely marked. Besides the present species, Africa produces several others, some of which are even more rich and intense in the metallic hues of their plumage.

THE YELLOW-BILLED CUCKOO.*

Those of North America belong to the genus *Coccyzus* of Vieillot, and are distinguished by a greater length of tarsus. They seem to delight in more deep woody solitudes than the true cuckoos, the latter being often found on hilly pastures and open heathy ground, if fringed with wood. A stranger who visits the United States for the purpose of examining their natural productions, and passes through the woods in May or June, will sometimes hear, as he traverses the borders of the deep, retired, high-timbered hollows, an uncouth guttural sound. He will frequently hear this without being able to discover the source from which it comes, as the yellow-billed cuckoo is both shy and solitary, and always seeks the thickest foliage for concealment. This bird is of a grayish-brown, with bronze reflexions, beneath white, the inner vanes of the primaries reddish cinnamon colour, the lower mandible white, and the length from the bill to the tail about twelve inches. Considerable discussion has taken place among philologists regarding the native languages of North America, remarkable, we are led to understand, for their great number and striking dissimilarity. We know not what may be the intention of the yellow-billed cuckoo in speaking as he does, or whether he is distinctly comprehended by his neighbours; but the following is Mr. Nuttall's account of the elements of his conversation:—"The male frequently betrays his snug retreat by his monotonous and guttural *kow, kow, kow, kow,* or *koo, koo, hoo, koo,* and *ko kuk, ko kuk, koo, koo, koo, kuk, koo, ko, koo, koo, ko, koo,* uttered rather plaintively, like the call of a dove. At other times the *kow, kow, kow, kow,* and the *'tk, 'tk, 'tk, 'tak,* or *'kh, 'kh, 'kh, 'kh, 'khk, kow, kow, kow, kow,* beginning slow, rises, and becomes so quick as almost to resemble the grating of a watchman's rattle, or else commencing with this call, terminates in the distinct cry of *kow, kow, kow.*" From this peculiar iteration the species in question has received the name of *kow* bird, and we do not wonder at it. It may be satisfactory to know, that the St. Domingo cuckoo (C. *Dominicus,* Nut.), although it sometimes cries both *kow, kow, kow, kow,* and *'kh, 'kh, 'kh, 'kh, 'kh, 'kah,* yet often utters in a raucous guttural voice, especially preceding rain, a word which sounds like *orrattottoo* or *worrattottoo*, exactly which has not yet been determined.

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* Coccyzus Americanus.—Bonap.

These birds pair and build in May; the nest is usually fixed among the horizontal branches of an apple-tree; sometimes in a solitary thorn, crab, or cedar, in some retired part of the woods. It is constructed with little art, and scarcely any concavity, of small sticks and twigs, intermixed with green weeds, and blossoms of the common maple. On this almost flat bed, the eggs, usually three or four in number, are placed; these are of a uniform greenish blue colour, and of a size proportionable to the size of the bird. While the female is sitting the male is usually not far distant, and gives the alarm by his notes when any persons are approaching. The female sits so close that you may almost reach her with your hand, and then she precipitates herself to the ground, feigning lameness to draw you away from the spot, fluttering, trailing her wings, and tumbling over in the manner of a woodcock, partridge, and many other birds. Both parents unite in providing food for the young. This consists for the most part of caterpillars, particularly such as infest apple trees. The same insects constitute the chief part of their own sustenance. They are accused, and with some justice, of sucking the eggs of other birds, like the crow, the blue jay, and other pillagers. They also occasionally eat various kinds of berries. But from the circumstance of their destroying such numbers of very noxious larvæ, they prove themselves the friends of the farmer, and are highly deserving of his protection. On the ground the cow-bird is very awkward, owing to the shortness of its tarsi; hence it seldom alights, except occasionally to pick up a tempting snail or insect; among the branches it is, however, active, and its flight is rapid, silent, and arrow-like.

The bill of this bird, as characteristic of the genus, is long, compressed, slightly arched, acute, and slender. The tarsi are short; the claws are arched and slender. The tail long and graduated; the wings ample. The upper mandible is brown at the tip, but its base, and the whole of the lower mandible, are yellow. General colour of the upper surface light greenish-brown. Tail feathers, except the two middle, black; the outer ones on each side being tipped with white. Under parts on each side being tipped with white. Under parts grayish-white. Length twelve inches and a half.

THE HONEY-GUIDE.*

In the genus *Indicator*, Vail., the bill is short, high, almost conical. The tail consists of twelve feathers, and is somewhat graduated, and at the same time a little forked. The skin is described to be so hard and tough as to resist the assaults of most hymenopterous insects; but bees, which they incessantly torment, are said to sting them in the eyes. The species, few in number, are known by the name of honey-guides, and inhabit Africa. The one mentioned by Sparman is said to attract the notice of the Dutch and Hottentots by a shrill cry of *cher, cher;* and when it perceives itself observed, it flutters onward to the hive of a wild bee, in hopes of partaking of the plundered honey. "I have had frequent opportunities," he observes, "of seeing this bird, and have been witness to the destruction of several republics of bees, by means of its treachery. I had, however, but two opportunities of shooting it, which I did to the great indignation of my Hottentots." It may be here noticed, we hope without offence, that naturalists themselves seem not seldom to belong to that *irritabile genus*, of which poets are usually supposed to form the greater portion. Though Dr. Sparman was a frequent eye-witness of the curious instinctive habits of the honey-guide, yet Vaillant doubts if that traveller ever saw the bird at all. He says that the account is merely a repetition of the fable believed and repeated by a credulous people at the Cape, and that it is erroneous to believe that the bird seeks to draw men after it for the purpose of sharing its plundered sweets; the fact is, that it calls not the man, but that the latter knows, by attending to the cry of the honey-guide while searching for its natural food, that it will be sure, ere long, to find the stores of the industrious insect. According to Bruce, the *moroc*, for so this singular species is sometimes named, occurs in Abyssinia; and he, too, throws discredit on Sparman's statement, his own being but ill received by not a few. However, Sir John Barrow, a careful and accurate inquirer, though not a professed naturalist, confirms it by stating, that people in the interior of the south of Africa are too well acquainted with the moroc to have any doubts, either as to the bird itself or its singular instinctive habits.

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* Indicator Vaillantii.

THE EGYPTIAN COUCAL.*

This bird may be taken as a specimen of the lark-heeled cuckoos. They are characterised by a strong and slightly curved beak, and especially by the claw of the inner of the two hind toes being long, straight, and pointed, like the hind claw of the lark. They appear to be solitary and recluse in their habits, feeding on insects, larvæ, and even small reptiles, and breeding in the holes of trees.

The Egyptian coucal is about fifteen inches in length. The feathers of the head and neck are stiff in their texture, and of a polished metallic greenish hue. The upper surface is of a greenish brown, passing into rufous brown on the upper tail-coverts. The tail is of a shining steely green, and the under surface is generally white. This bird is common in Egypt; it is called *hou-hou* by the Arabs, from its note, which is a repetition of those syllables.

* Centropus Ægyptius.

THE TROGONS.*

The Trogons, forming a group of richly-coloured birds, abound in South America, where they conceal themselves in the central solitudes of umbrageous forests, and, except during the breeding season, dwell insulated and alone. They will sit motionless for half a summer's day, often upon a withered branch, and if not concealed by some accidental intervening mass of foliage, they fall an easy prey to the keen-eyed hunter, who eagerly searches for birds not less remarkable for the delicacy of their flesh than the beauty of their plumage. During the morning and evening hours, Mr. Swainson informs us, they become more active; venturing at these times into the open parts of the forest, and taking a shady station, dart upon winged insects, particularly beetles. At other times they feed upon fruits, especially the rich purple berries of the different *Melastomæ,* "at which," he says, "they invariably dart, precisely as if they were insects capable of getting away." It has been remarked by the woodland hunters, that the skin of these birds is of such delicate texture as to be with difficulty preserved in a natural or complete condition. It is probable for this reason that in museums they exhibit a heavy, shapeless aspect, redeemed, it is true, by the gorgeous colours or metallic splendour of their plumage.

Mr. Swainson acknowledges that the trogonidæ, or trogons, are, in one sense, such an isolated group, that zoologists have been much perplexed in what natural family to arrange them; and he remarks, that Cuvier, in placing them near to the puff-birds, seems to have had some perception of what Mr. Swainson believes to be their true station in nature, although both these groups find a place among his climbing birds. "Mr. Vigors," he observes, "in his 'Natural Arrangement,' first placed the genus *Trogon* between *Crotophaga* and *Corythaix* with a mark of doubt, but subsequently arranged them near the parrots. The Trogons," says Mr. Swainson in continuation, "are abundant in South America; and are perhaps, one of the most extraordinary genera found in that continent. They are not climbing-birds, nor are they in the least organised for that purpose; they live in the deepest and most gloomy shades during day, when they sit almost motionless on a dead branch. The singular account of these birds given by our hunters first awakened our attention to them in their native regions; and these results have since been fully confirmed by the observations made on those species peculiar to Demerara by Mr. Waterton, a well-known and observing field-naturalist. Finally, the trogons, like the goat-suckers, have remarkably thin skins; like them, they feed upon the wing; the feet of both are so short and feeble as scarcely to be of any other use

HEAD OF THE TROGON.

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* Trogon.—Linn. Couroucouis.

than to rest the body; the bill in both is remarkably short; the plumage in both is soft and loose; both have the mouth defended by strong bristles; and both are most active during twilight. Here, then, is the point, if not of absolute junction, at least of the strongest affinity yet discovered between the *Caprimulgidæ* and the *Trogonidæ*. The South American Trogons are all green, with barred or black tails, tipped with white; in many instances the barring is lost after a few moultings, the tail becoming white; the space round the eyes is feathered. In the old wild species the general colour is brown, one or two being very dull greenish.

Mr. Gould's splendid "Monograph of the Trogonidæ" was finished in 1838; and in the introduction to that work he observes, that those birds, as their general structure and their habits sufficiently indicate, belong to the fissirostral tribe of the *Insessores*. "Greatly insectivorous," says Mr. Gould, "they seize the flitting insect on the wing, which their wide gape enables them to do with facility; while their feeble tarsi and feet are such as to qualify them merely for resting on the branches, as a post of observation whence to mark their prey as it passes, and to which, having given chase, to return. As in all other groups, however, we shall find modifications of the type constituting the ground of generic or subgeneric divisions. If not strictly elegant in form, the Trogons, in the brilliancy of their plumage, are surpassed only by the *Trochilidæ*: their splendour amply compensates for every other defect. Denizens of the intertropical regions of the Old and New World, they shroud their glories in the deep and gloomy recesses of the forest, avoiding the light of day and the observation of man: dazzled by the brightness of the meridional sun, morning and evening twilight is the season of their activity."

The Trogons themselves are described as solitary birds, extremely jealous of their freedom, never frequenting inhabited or open tracts, and delighting in the silence of deserts. "The interior of the thickest forests," says the describer, "is their chosen abode for the entire year. They are sometimes seen on the summit of trees, but in general they prefer the centre, where they remain a portion of the day without descending to the ground, or even to the lower branches. Here they lie in ambush for the insects which pass within reach, and seize them with address and dexterity. Their flight is lively, short, vertical, and undulating. Though they thus conceal themselves in the thick foliage, it is not through distrust, for when they are in an open space, they may be approached so nearly as to be struck with a stick. They are rarely heard to utter any cries, except during the season of reproduction, and then their voice is strong, sonorous, monotonous, and melancholy. They have many cries, from the sound of one of which their name is derived. All those whose habits are known nestle in the hollows of worm-eaten trees, which they enlarge with their bills, so as to form a comfortable and roomy residence. The number of eggs is from two to four, and the young are born totally naked, but their feathers begin to start two or three days after their birth. The occupation of the male during incubation consists in watching for the safety of his companion, bringing her food, and amusing her with a song, which, though we should call it insipid, is to her without doubt the expression of sensibility. Some of the Couroucouis express the syllable *pio*, repeated many times in succession, with a powerful yet plaintive tone. Their accent almost reminds one of the wailings of a child who has lost its way, and it is thus that they cry to each other amidst the silence of the forests. As soon as the young are able to provide for themselves, they separate from their parents to enjoy that solitude and isolation which appear to constitute the supreme happiness of the species. Their aliments are composed of larvæ, small worms, caterpillars, coleoptera, and berries, which they swallow entire. The male at various ages, the female, and the young, differ in their plumage, which has given rise to the institution of more species than are really in existence."

Mr. Gould states that he is enabled in a great measure to confirm this account, from the information which he obtained respecting this group whilst he was engaged upon his monograph. But he adds a few facts in some degree contradictory. His friend, Mr. John Natterer, who had many opportunites of observing these birds in a state of nature, informed him that he had seen them, though very rarely, congregating together, and more than one species in company; a circumstance which Mr. Natterer accounts for on the principle that instinct leads them, by some migratory movement, to abandon one district at a certain season of the year, in search of another where food is more abundant. These migrations, however, Mr. Gould observes, cannot be extensive, inasmuch as their wings are not adapted for a lengthened flight; besides which, every new district of any great extent presents us, he remarks, with its peculiar species; for example, none of the species inhabiting Mexico have been found in the Brazils, and *vice versâ*.

With regard to the geographical distribution of the Trogons, Mr. Gould says that they appear, on general survey, to be divided between America, including its islands, and the islands of the Indian Archipelago; two or three species only have yet been discovered on the continent of India, and those principally inhabiting the countries bordering the Indian seas. The great nurseries for these birds in the Old World are, he observes, the islands of Ceylon, Sumatra, Java, Borneo, &c.; while over the whole continent of Africa only a single species has yet been discovered. "It is in South America, however," says Mr. Gould, "that we find the greatest number of species, and those of the most exquisite plumage; nor is this all, for it will be further observed that, in accordance with the great geographical distribution just pointed out, there exist certain characters common to the species inhabiting each region, which, although not very apparent to the unpractised eye, constitute the basis of generic subdivisions, and, doubtless, have an influence upon their habits and manners. Between the American species and those inhabiting India and Africa, we not only find this broad line of distinction, but discover moreover that the birds of each country are themselves naturally resolvable into certain minor groups, each possessing its peculiar characters, and each as different in habits as in form."

Mr. Gould further remarks that the beautiful species of the group to which the subgeneric title of *Calurus* has been applied, distinguished by a redundancy of flowing plumage, are not, as may be expected, so well fitted for flight, or for taking their prey on the wing, as are the most closely plumed species, to which the generic name *Trogon* is now restricted; accordingly, Mr. Natterer informed Mr. Gould that the gorgeous birds of the former group tenant the topmost branches of the loftiest forest-trees, clinging beneath them like parrots, and feeding more exclusively on fruits and berries; while, on the other hand, Mr. Gould notices Mr. W. S. Mac Leary's statement, that the singular Trogon inhabiting Cuba (the only example of the subgenus *Temnurus*), which approximates to the woodpeckers in the more lengthened form of the bill, in the rigid character of the outer tail feathers, and in the spotting of the wings, approaches these birds also in its habits, giving a preference to the holes of trees rather than to the branches, from the bark of which it procures the larvæ and various insects which constitute its food.

The habits of the Old World species are much less known than those of the American Trogons; but from the more robust form of their bill and their wide gape, Mr. Gould is inclined to suspect that they feed even still more exclusively on insects than on fruits; independently, however, of the greater strength of the bill, the non-serration of the edges of the mandibles, and the half-denuded face, they may, Mr. Gould remarks, at all times be distinguished by the rich brown colouring of the backs of the males, and by the entire absence of bars across the outer tail-feathers. With respect to the brown colouring of the plumage, there are, he adds, it is true, one or two exceptions to the rule, but none to the absence of the barring of the tail-feathers when accompanied by the former character.

The remarkable plumage and shy habits of the Trogons did not escape the observation of the ancient Mexicans, in whose mythology one of the species, at least (*Trogon paroninus*), was celebrated. Another species, the *Tzinitzcan* of the Mexicans (*Trogon Curucui*, Linn.), was employed by them, according to Hernandez, in the fabrication of the figures and pictures (*imagines*) used on festivals, in war, and in their temples. They were probably kept in one of the two houses which formed the royal menagerie of ancient Mexico, one of these houses being appointed to birds which did not live by prey, the other to birds of prey, quadrupeds, and reptiles. Three hundred men, according to Cortes, were employed to take care of these birds, besides their physicians, who watched their diseases and applied timely remedies. Of the three hundred attendants, some procured their food, others distributed it, others took care of the eggs at the time of incubation; whilst others, at certain seasons, picked their plumage; for the king not only delighted in the sight of so many species, but was very careful of their feathers, for the sake of the famous mosaic images and pictures, as well as of the other works which were made of them.

THE GOLDEN TROGON.*

The most magnificent of the genus is the bird thus named, a rare and remarkable species, of which neither delineation nor description can convey an adequate idea. The greater proportion of the plumage is apparently composed of burnished gold. The head ornamented by a brilliant crest, the wing-coverts falling in flakes of golden-green over the deep purplish-black of the primary and secondary quill feathers, the rich carmine of the lower parts bestowing a warmth and depth of effect which no Venetian painter ever equalled, and the long waving and highly metallic feathers of the tail-coverts, extending about three times the length of the whole body, present a combination of beauty almost unexampled in the feathered tribes. The first specimens seen in this country were brought, we believe, by Mr. Schenley from Vera Paez, in Central America. They are very much sought after as head-gear by the Peruvian damsels.

TROGON MEXICANUS.

The north of Mexico is the locality for this bird. Of an old male we have the following description from the pen of Mr. Gould:—"Beak bright yellow; throat and ear-coverts black, gradually blending with the green which covers the chest and the whole of the upper surface; two middle tail-feathers green, with black tips, the two next on each side wholly black; the three outer on each side black, with white tips; wings black, the whole of which, with the exception of the primaries, is finely dotted with gray; a crescent of white encircles the chest; breast, belly, and under tail-coverts fine scarlet; feet brown. Total length, eleven to twelve inches; wing, five and three-quarters; tail, seven and three-quarters.

"The young male is distinguished from the adult by the gray freckles on the wings being rather stronger, and more inclined to brown on the secondaries; by the extreme outer edge of the primaries being white; and by the tail being regularly barred with black and white, which character is most conspicuous on the outer edges.

"The top of the head, throat, chest, and back of the female dark brown, inclining to olive on the upper surface, and to rufous on the chest; across the chest an obscure band of light gray, the lower part and vent scarlet; wings black, slightly freckled with brown on the outer edges of the secondaries and shoulders; the outer edges of the primaries fringed with white; two middle tail-feathers chesnut-brown, tipped with black; the two next on each side wholly black; the remainder strongly barred with black and white for nearly their whole length; bill yellow, clouded with brown."

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* Trogon pavonius.—Temm.

THE AFRICAN TROGON.*

The locality of this bird is South Africa. The bill of the male yellow, with a tinge of blue; the whole of the head, throat, chest, shoulders, back, and upper tail-coverts, are resplendent green; the breast and under surface bright blood-red; the wings brown, the greater coverts and secondaries powdered with grayish white, the outer edge of each feather having a tinge of metallic green; two centre feathers of the tail dark purplish green, two next on each side dark olive green, the three outer on each side dark green at their base, largely tipped with white; feet light brownish yellow.

In the female the upper surface and tail closely resemble those of the male; round the eye and throat rufous brown, becoming paler on the chest, which is slightly tinted with rosy pink; lower part of the abdomen and tail-coverts deep rose-red. The total length is eleven inches and a quarter.

Narina, whose name this, the only African species, bears, was a Gonaqua Hottentot girl, whose charms and manners appear to have produced a great impression on Le Vaillant, and he devotes some pages to her in his Travels.

Mr. Gould quotes him for information respecting the habits and economy of this bird. Its favourite haunts are the thickest parts of the forest; and there it sits, nearly motionless, on a low, dead branch during mid-day: in the morning and evening it captures its food, consisting chiefly of locusts, beetles, and other winged insects, with the addition of caterpillars. Its flight is short and rapid; and it darts from its chosen perch on every passing insect, returning to the station which it had left, or settling near it. Its haunts are described as being in the extensive woods called Autemiquoi, and in those on the banks of the Gamtoos River, in the Caffre country. During the pairing season the male, which is at other times mute, utters frequently a melancholy cry. The eggs, four in number, nearly round, and of a rosy white hue, are laid in a nest in the hole of a tree, and the female sits for twenty days. The account given of the young is extraordinary; for we find it recorded that the "*moment* they are excluded they take flight, and follow their parents for a considerable period."

THE ASIATIC TROGON.

Of the Asiatic trogons, we may take an example in the *Trogon* (*Apaloderma*) *Reinwardtii* of Temminck. The bill is a bright reddish orange; the top of the head, back, and upper tail-coverts dark green; the throat yellow; the ear-coverts, sides of the neck, and chest, olive-brown; the belly and under surface yellow, becoming rich orange on the sides; the tarsi are yellow; and the bare skin round the eye blue; the total length is from twelve inches and a half to thirteen inches and a half.

The young are similar to the adult, particularly in the colours of the back and tail, a circumstance, Mr. Gould observes, which rarely occurs in the family; as in all the trogons, when the plumage of the female differs much from that of the male, the young birds generally resemble the former; while, as in the present instance, where the sexes are nearly alike, the young partake of the adult covering, differing only in the markings of the wings and the rufous-brown tint of the breast.

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* Trogon (Apaloderma) Narina.—Le Vaill.

This bird inhabits the islands of Sumatra and Java, where it was discovered by Professor Reinwardt, whose name it bears. It appears, however, to be a scarce bird; as the vast collections brought to England by Sir T. Stamford Raffles and Dr. Horsfield did not contain a single example.

THE MALCOHAS.*

Another group of the order now under consideration is constituted of the Malcohas. These feathered creatures appear, as yet, to be almost exclusively confined to India and the adjacent islands. The generic characters consist in the bill being stout, longer than the head, and generally curved at the base; and in the side of the head, for a large space round the eye, being destitute of feathers, and exhibiting a naked granulated skin. The wings are short; the tail is long and graduated.

THE RED-HEADED MALCOHA.†

The island of Ceylon, so famous for its profuse vegetation, especially for its aromatic trees, and no less so for its animals of various kinds, among which the pearl-bearing oyster is peculiarly conspicuous, is the habitat of the Red-headed Malcoha. This bird is about sixteen inches in length; the general plumage above is shining greenish-black; the tail is tipped with white and very graduated; the under surface is white; the large naked space round the edges is orange-red, bordered along its under margin with a rim of white. It frequents the deep woods, and is said to live chiefly on fruits. But of its habits, as of those of the rest of the group, naturalists have at present much to learn.

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* Phœnicophaus.—Vieill.

† Phœnicophaus pyrrhocephalus.

THE PARTI-COLOURED BARBET.*

We now come to the family termed *Picidæ*, which includes the barbets, the woodpeckers, and the wrynecks, birds of true scansorial habits, climbing about the trunks and larger branches of trees with great facility, and feeding chiefly on such insects as secret themselves either in the crevices, beneath the bark, or in the soft wood of decayed trees.

The Barbets are distinguished by their large conical beak, which appears, as it were, swollen or puffed out at the sides of the base, and is bearded, from whence the name of these birds is derived. The beak has five tufts of bristles, directed forwards. One of these tufts is behind each nostril, one on either side of the lower mandible, and the fifth is under the symphysis.

Their short wings and heavy proportions do not admit of swift flight; and their prey consists of insects and young birds, which they surprise, and also of fruits. Their nests are generally built in the holes of trees.

The sub-genus *Bucco*, Cuvier, *Capito*, Vieillot, embraces the true barbets, which have the conical bill slightly compressed and a little elevated in the middle. Their plumage is, generally speaking, gay; and they are to be found both in Africa and Asia. During the breeding season, they go in pairs, but they congregate in small flocks during the remainder of the year. The buff-faced barbet † affords an example of the true barbets. It may be observed in the British Museum; its native place is uncertain.

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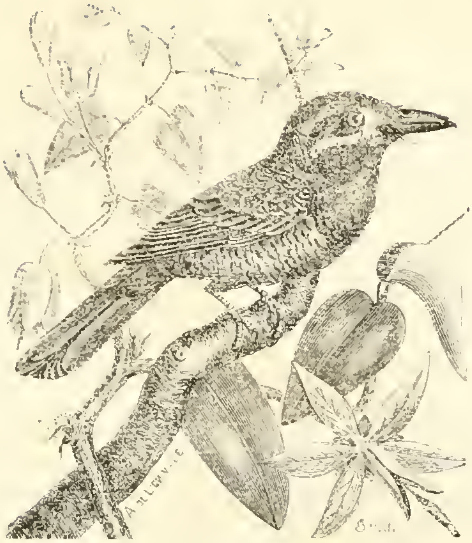
* Bucco Versicolor.

† Bucco Lathami.



THE SPOTTED-BELLIED TAMATIA.*

Of the Barbets, there is a sub-genus, *Tamatia*, Cuvier. The great head, short tail, and large bill of these puff-birds, as they are called, give them, as Cuvier observes, an air of stupidity, which their melancholy and solitary habits do not lessen. They are said to feed entirely on insects. All the recorded species are American. Swainson obtained one of them from Southern Brazil.

This naturalist, who had good opportunities of observing these birds, gives the following interesting account of their habits. "There is something very grotesque in the appearance of all the Puff birds; and their habits in a state of nature are no less singular. They frequent open cultivated spots near habitations, always perching on the withered branches of a low tree; where they will sit nearly motionless for hours, unless, indeed, they descry some luckless insect passing near them, at which they immediately dart, returning again to the identical twig they had just left, and which they will sometimes frequent for months. At such times the disproportionate size of the head is rendered more conspicuous by the bird raising the feathers, so as to appear not unlike a puff-ball; hence the general name they have received from the English residents in Brazil, of which vast country all the species, I believe, are natives. When frightened, this form is suddenly changed by all the feathers lying quite flat. They are very confiding, and will often take their station within a few yards of the window. The two sexes are generally near each other, and often on the same tree."

The length of this species is about eight inches. Plumage black and white, except the belly and vent, which are tinged with buff.

These birds lead off gradually to the true woodpeckers, a group of birds full of interest, in whatever point of view they are examined, and particularly exhibiting those marks of design which illustrate the wonders of the Great Creator.

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* Tamatia Maculata.—Cuv.

THE WOODPECKERS.*

The Woodpeckers, wherever they are found, are exactly adapted to their circumstances. The tarsi are short and strong, and the toes large and armed with short hooked claws, which pierce the surface of the bark, or catch the slightest inequalities. In addition to the advantages thus derived from the powers of the feet, no bird is more indebted to the structure of its tail than the woodpecker. This part is, in fact, an essential support, and even a propelling instrument, calculated to aid the bird as it climbs. It is composed of ten feathers, the central ones having the shafts long, elastic, slightly bent inwards, and gradually narrowing to a point, which projects beyond the web. Thus pressed against a tree, these points being driven inwards, and catching every projecting roughness, the tail acts as a springy support or prop.

Nor less perfectly adapted to its purposes of splitting and chipping trees, is the bill of the woodpecker. At its base it is strong and thick, narrowing as it proceeds, till it ends in a hard wedge-shaped tip, compressed at its sides. The tongue is equally admirable as a flexible probe: long and worm-like, it is capable, by a peculiar muscular apparatus, of being protruded to a great extent, and is armed at its tip with a series of short spines, directed backwards, in addition to which it is covered with a viscid saliva. This organ, endued with great latitude of motion, the bird inserts into the crevices of the bark, into the fissures it makes with its beak, or into any aperture, in search of insects and their larvæ, and withdraws it; the prey adhering to it by means of the saliva, and being prevented from rubbing off by the retroverted bristles which barb the tip.

And yet Buffon flippantly describes the family of the woodpeckers as degraded miserable beings. He says, "The narrow circumference of a tree circumscribes their dull round of life," and on this they are "constrained to drag out an insipid existence, in boring the bark and hard fibres, in order to extract their prey."

It is not to be wondered at, that America, so rich in deep forests, as it once must have been, and indeed is now where the axe of the woodman has not yet penetrated, should produce many specimens of woodpeckers. Lawson thus enumerates those in Carolina known to him:—

"Of woodpeckers, we have four sorts. The first is as big as a pigeon, being of a dark brown colour, with a white cross on his back, his eyes circled with white, and on his head stands a tuft of beautiful scarlet feathers. His cry is heard a long way; and he flies from one rotten tree to another, to get grubs, which is the food he lives on.

"The second sort are of an olive colour striped with yellow. They eat worms as well as grubs, and are about the bigness of those in Europe.

"The third is the same bigness as the last; he is pied with black and white, has a crimson head without a topping, and is a plague to the corn and fruit; especially the apples. He opens the covering of the young corn so that the rain gets in and rots it.

"The fourth sort of these woodpeckers is a black and white speckled or mottled; the finest I ever saw. The cock has a red crown; he is not near so big as the others; his food is grubs, corn, and other creeping insects. He is not very wild, but will let one come up to him; then shifts on the other side of the tree from your sight; and so dodges you for a long time together. He is about the size of an English lark."

Catesby notices the same species as Lawson, and adds others; some of which, in connexion with the Woodpeckers of other lands, we shall now proceed particularly to notice.

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* Picidæ.

THE GREAT BLACK WOODPECKER.*

Mr. Gould thus describes the habits of the great black woodpecker:—We need hardly say that it is on the bark of trees more exclusively that the woodpecker finds its food, and to this end are its powers and organs adapted. If we examine the toes of the present species, which are to be taken as illustrative of form in the whole of the family (with the exception of a single limited group), we find them long and powerful, furnished with strong claws, admirably adapted for grasping or clinging to the rough inequalities of the bark; besides this, they are placed in pairs, so as in some measure to antagonise; but not, as generally stated, two before and two behind, for one pair is lateral, and diverges from the other at an acute angle, so as to be applied to the convexity of the tree, and thus render the grasp firm and close. The tail is composed of stiff feathers, the shafts of which taper gradually from the base of the extremities, which, curving inward when pressed against a tree, not only form a fulcrum for the support of the body, but by their elasticity aid the progress of the bird. This provision, the more needed from the posterior situation of the legs, is admirably calculated for ascending; and having explored the bark by a spiral course, the woodpecker flies off to the next tree, to repeat the same process. The flight of the present species is undulating, seldom protracted to any extent, but limited to a transit from tree to tree in the seclusion of its native woods. Its food consists of the larvæ of wasps, bees, and other insects; in addition, however, it devours fruits, berries, and nuts with avidity. The female selects the hollows of old trees, in which she deposits two or three eggs of a snowy whiteness."

Mr. Hewitson saw this species in two instances only in Norway, and at a distance. The birds were so wild that to approach them was impossible. The same observing ornithologist says, that on the wing the black woodpecker looks like a crow, and that its notes resembles a loud hoarse laugh.

Mr. Yarrell, in his interesting work on "British Birds," states, that the great black woodpecker was added to the catalogue of the birds of Britain by Dr. Latham, who said that he had been informed that the species had occasionally been seen in Devonshire and the southern parts of the kingdom. Mr. Yarrell refers also to Dr. Pulteney's catalogue of the Dorsetshire birds, where the great black woodpecker is noticed as having been more than once killed in that country—one, in particular, is said to have been shot in a nursery at Blandford, and another at Whitechurch; and he then quotes Montagu's supplement for the following passage, which to every one who is aware of the great ornithological knowledge of the present Earl of Derby, will be conclusive:—"Lord Stanley assures us that he shot a *Picus Martius* in Lancashire; and we have heard that another was shot, in the winter of 1805, on the trunk of a tree in Battersea Fields." Mr. Yarrell then goes on to state that the specimen of the black woodpecker, formerly in the collection of Mr. Donovan (who was well known to give very high prices for rare British-killed birds, for his own use in his "History of British Ornithology"), was affirmed to have been shot in this country; and at the sale of Mr. Donovan's collection, this specimen was purchased by the Earl of Derby, and is now at Knowsley. Mr. Yarrell further states that he had been told of two instances of the black woodpecker having been killed in Yorkshire, and that it is also recorded to have been killed in Lincolnshire. "A few years since," says Mr. Yarrell in continuation, "a communication was made to the Zoological Society of London, that two examples of the great black woodpecker had been at that time killed in a small wood, near Scale Inn, in Norfolk; and, still more recently, a pair were frequently seen in a small preserved wood near Christchurch, in Hampshire. It was hoped that they would have remained to go to nest; but the birds, disturbed by being too-frequently watched, left the wood. Lastly, I may add, that Sir Robert Sibbald, in his *Scotia Illustrata*, claims *Picus Martius* as a bird of Scotland, including it in his *Historia Animalium in Scotia*."

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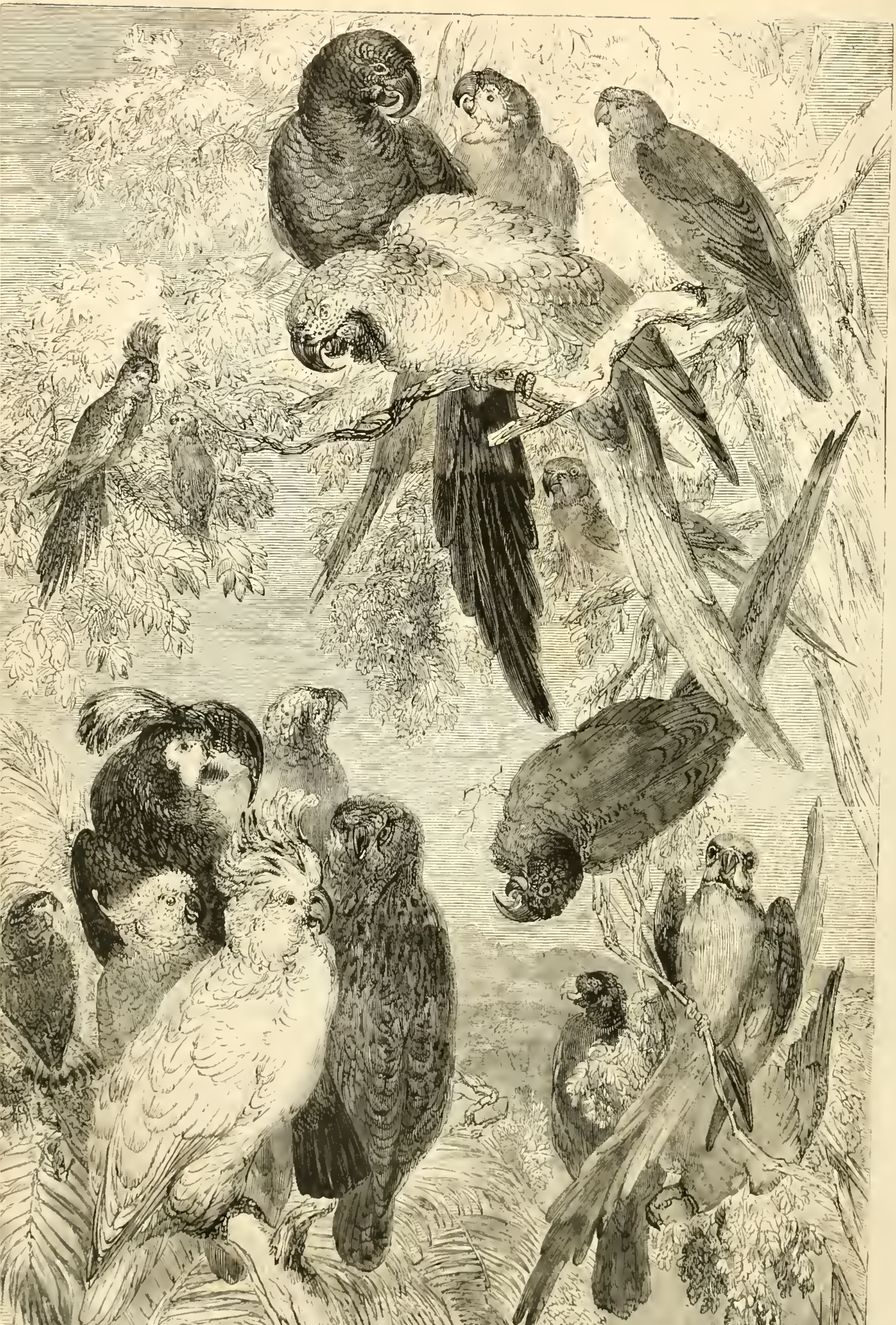
* Picus Martius.

Willoughby does not declare that this bird is not found in England. He procured his specimen in the market at Ratisbon, in Germany, and it was killed in the neighbourhood of that city; but touching its absence in England, he only says, "It is not found in England that *we know of*." Lewin figures the species in his "Birds of Great Britain," and writes thus:—"We believe this to be exceedingly scarce in England; but as we have sufficient authority to say that it has been met with more than once in the southern and western parts of this kingdom, it may not be amiss to figure it among the British species." That the bird has occurred in this country in a natural state, even of late years, no one, we apprehend, can doubt, after the perusal of the evidence above collected; and the probability is, that this fine species was comparatively abundant in the vast forests which formerly covered so great a portion of Britain, especially in the northern parts of the country.


W. PEARSON

THE GREEN WOODPECKER.*

This bird, generally observed either climbing the bark of trees in search of insects, or passing by a short and undulating flight from one tree to another, is found over the greater portion of the wooded districts both of England and Scotland. It bears various names: thus the people of Surrey and Sussex call it the yaffle or yaffil, from its repeated notes, which are compared to the sound of a laugh; in Northumberland it is styled rain-fowl, from its being more loud and noisy before a shower; while other terms, which are modifications of its name, as, woodwall, woodpie, and woodnacker, are in use in the New Forest, in Hampshire.

The green woodpecker obtains its food both upon trees and on the ground; its flight is short, undulating, and rather laborious. "When seen moving upon a tree," says Mr. Yarrell, "the bird is mostly ascending in a direction more or less oblique, and is believed to be incapable of descending, unless this action is performed backwards. On flying to a tree to make a new search, the bird settles low down on the bole or body of the tree, but a few feet above the ground, and generally below the lowest large branch, as if to have all its work above it, and proceeds from thence upwards, alternately tapping, to induce any hidden insect to change its place, pecking holes in a decayed branch, that it may be able to reach any insects that are lodged within, or protruding its long, extensible tongue to take up any insect on the surface; but the summit of the tree once obtained, the bird does not descend over the examined part, but flies off to another tree, or to another part of the same tree, to recommence its search lower down nearer the ground."

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* Picus Viridis.

A very large proportion of the food of this species is derived from ants and their eggs. Every person who has lived in the country must frequently have seen this gay-coloured woodpecker feeding at some ant-hill. Mr. Yarrell states that he has seldom had an opportunity of examining a recently killed specimen, the beak of which did not indicate, by the earth adhering to the base and to the feathers about the nostrils, that the bird had been so at work. Bechstein says that, in the winter, it will take bees from the hive, and that in the house it is fed on nuts, ants' eggs, and meat. Of its manners in captivity, the German ornithologist states that the beauty of its plumage is all that can be said of it; for it is so fierce, quick, and stubborn, that it can only be kept chained. It is curious, he adds, to see it crack nuts.

THE GOLDEN-WINGED WOODPECKER.*

"No sooner," says Audubon, "has spring called these birds to the pleasant duty of making love, than their voice, which, by the way, is not at all disagreeable to the ear of man, is heard from the tops of high decayed trees, proclaiming with delight the opening of the welcome season. Their note at this period is merriment itself, as it imitates a prolonged and jovial laugh, heard at a considerable distance. Several males pursue a female, reach her, and, to prove the force and truth of their love, bow their heads, spread their tails, and move sideways, backwards, and forwards, performing such antics as might induce any one witnessing them, if not of a most morose temper, to join his laugh to theirs. The female flies to another tree, where she is instantly followed by one, two, or even half a dozen of these gay suitors, and where again the same ceremonials are gone through. No fighting occurs, no jealousies exist among these beaux, until a marked preference is shown to some individual, when the rejected proceed in search of another female. In this manner all the golden-winged woodpeckers are soon happily mated. Each pair immediately proceed to excavate the trunk of a tree, and finish a hole in it sufficient to contain themselves and their young. They both work with great industry and apparent pleasure. Should the male, for instance, be employed, the female is close to him, and congratulates him on the removal of every chip which his bill sends through the air. While he rests, he appears to be speaking to her on the most tender subjects, and when fatigued is at once assisted by her. In this manner, by the alternate exertions of each, the hole is dug and finished. They caress each other on the branches, climb about and around the tree with apparent delight, rattle with their bill against the tops of the dead branches, chase all their cousins the red-heads, defy the purple-grakles to enter their nest, feed plentifully on beetles and larvæ, cackling at intervals, and ere two weeks have elapsed the female lays either four or six eggs, the whiteness or transparency of which are doubtless the delight of her heart.

"If to raise a numerous progeny may contribute to happiness, these woodpeckers may be happy enough, for they have two broods each season. Even in confinement, the golden-winged woodpecker never suffers his naturally lively spirit to droop. It feeds well, and by way of amusement will contrive to destroy as much furniture in a day as can well be mended by a different kind of workman in two. Therefore, kind reader, do not any longer believe that woodpeckers—I mean those of America—are such stupid, forlorn, dejected, and unprovided-for beings as they have hitherto been represented." Another bird of the same country is of remarkable interest: it is the largest white-bill woodpecker of Catesby; and the large log-cock and ivory-billed woodpecker of the Anglo-Americans.

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* Colaptus Auratus.

THE IVORY-BILLED WOODPECKER.

This bird has been accurately and pleasingly described by one of our poets:—

"Majestic bird! the broad Ohio knows
Its presence well. Here, and along the banks
Of Mississippi, whence luxuriant rise
Towering to heaven the tall and graceful pines,
And cypress-trees from black and gloomy swamps
Prodigious of extent: here are its favourite haunts:
Among these trees—some in maturity,
And others overgrown with verdant moss,
Of every leaf dismantled, standing forth,
By Time's impartial hand memorialised,
As emblems apt of that unwished decay
Which all that lives, alas! must undergo.

Here, or at times, perchance, it may be seen
Sitting, where stretched below huge lifeless trunks
Protrude themselves above the slimy ooze,
Whose surface fair conceals the deep morass;
Beneath a carpet smooth of emerald tints,
From Nature's skilful hand in colours true,
And decorated o'er with patterns rare,
Wrought in her matchless looms—the blue flag gay,
Or water-lily with its ample leaves,
And blossoms exquisite of dazzling white,
And other plants aquatic—wily lurk
Serpents, and loathsome frogs, and pestilence,
And poisonous alligators, watching for their prey:
Anon, on topmost bough of some tall tree,
Noble of mien, as monarch of the woods,
We see him perched, this interesting bird,
Asking no shelter of the branches green
Of waving pine-trees—cool, delicious shade—
But sitting calmly in his solitude,
As if luxuriating in his winged power,
To soar above the reach of human kind,
And from these heights to gaze on all below.
Sometimes from forth these savage wilds are heard

The pleasure-notes of our strange solitaire,
Resounding trumpet-like, loud, long, and shrill,
Whilst death-like silence reigns sublimely round:
When tired with flight or work he here repairs
To rest awhile from labour, and with song—
Strange song—but to his ear, by nature formed
To love such music, melody divine.
Not thus, in ease luxurious, does he live,
Wasting his days or hours in idleness,
For he has much to do, industrious bird:
Wherever he has been his work is traced;
Cart-loads of bark lie scattered round the roots
Of mighty pine-trees, and from the trunk itself
Chips in such quantity as axe-men true
Had wrought there for a morning. Yet not so;
His choice of trees engages not their powers;
Those only on whose limbs disease has seized,
Whose substance has been penetrated oft
By crew insidious of the insect tribe,
Who leave behind deposit poisonous,

Which dooms to death the hapless noble tree:
These are his prey, aright by instinct led.

True to His laws the universe who made,
And who sustains thereby each living thing,
A nest is formed to house the helpless young,
Where insect never crawled:—there hollowed out
In the best bough the nest commodious stands;
A comfortable home from danger free;
And in their cradle safe rocked by the breeze,
And shaded from the noon-day's scorching heat
By blinds of hue delicious, dark green leaves,
In comfort there they rest the live-long day;
And who would grudge them this their privilege,
Attended by both parents, happy brood?
These partners true the toils of watching share;
Constant and fond through life they never part,
But lessen labour and increase delight
By mutual obligation; thus they live:
A moral with their history is blent,
Which speaks of justice, tenderness, and love,
Worthy the study of proud reason's sons,
Who in their practice oft these laws forget.

Unlike the naturalist of old, Buffon,
To whom unknown the value of these birds,
Would have all woodpeckers destroyed, we say,
'Live on and multiply, pursue your work
Of searching out the haunts of insects dire,
And save from death our noble forest trees:'
Millions of these, amid this mighty host,
By insect rapine prematurely die;
And hence the wisdom of Omnific mind,
Which works by rules immeasurably good,
In placing here this bird industrious.
With giant strength, it drives its ivory bill
Into the trunks of trees that else must die,
Thus makes its meal of the marauding crew
Which would the vital sap ere long destroy;—
And saves from ruin many a monarch tree.

Well may they value thee who know thy worth;
And, whether perched on topmost bough erect,
Sitting in state, or moving through the air
In graceful undulations, still intent
Thy prey to seize—wherever thou art traced,
Majestic bird! thou shalt our song inspire."[*]

The broad extent of this bird's dark and glossy plumage, with the well-defined snowy markings of the neck and wings, relieved by the rich tracery of the carmine crest, and brilliant yellow eye, in some way so reminded the enthusiastic Audubon of the noble productions of a great Flemish painter, that whenever he saw one of these gorgeous birds flying from tree to tree, he would exclaim, "There goes a Vandyke!" The ivory-billed woodpecker confines its rambles to a comparatively small portion of the United States, and is never observed in the middle portions of the Union, where the nature of the wood does not appear to suit its habits. "Descending the Ohio," says Mr. Audubon, "we meet with this splendid bird for the first time near the confluence of that beautiful river and the Mississippi; after which, following the windings of the latter, either downwards towards the sea, or upwards in the direction of the Missouri, we frequently observe it. On the Atlantic coast, North Carolina may be taken as the limits of its distribution although now and then an individual of the species may be seen in Maryland. To the westward of the Mississippi, it is found in all the dense forests bordering the streams which empty their waters into that majestic river from the declivities of the Rocky Mountains. The lower parts of the Carolinas, Georgia, Alabama, Louisiana, and Mississippi are, however, the most favourite resorts of this bird, and in these states it constantly resides, breeds, and passes a life of peaceful enjoyment, finding a profusion of food in all the deep, dark, and gloomy swamps dispersed throughout them.

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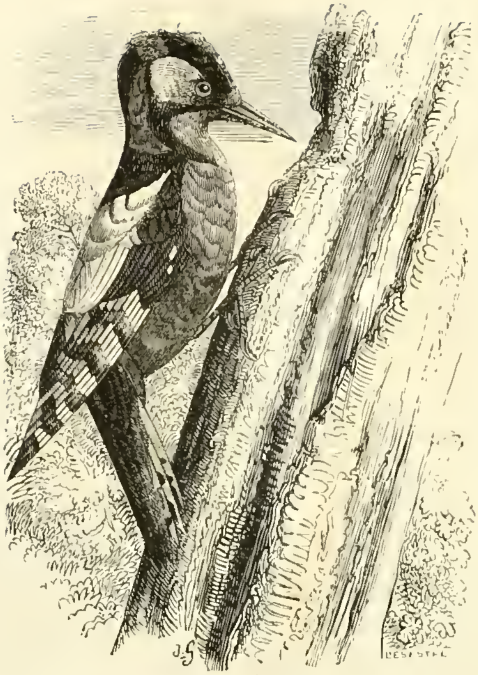
[*] S. S. S.

"I wish, kind reader, it were in my power to present to your mind's eye the favourite resort of the ivory-billed woodpecker. Would that I could describe the extent of those deep morasses, overshadowed by millions of dark, gigantic cypresses, spreading their sturdy, moss-covered branches as if to admonish man to pause and reflect on the many difficulties which he must encounter should he persist in venturing farther into their almost inaccessible recesses, extending for miles before him, where he would be interrupted by huge projecting branches, here and there the mossy trunk of a fallen and decaying tree, and thousands of creeping and twining plants of numberless species! Would that I could represent to you the dangerous nature of the ground, its oozing, spongy, and miry disposition, although covered with a beautiful but treacherous carpeting, composed of the richest mosses, flags, and water-lilies, no sooner receiving the pressure of the foot than it yields, and endangers the very life of the adventurer; whilst here and there, as he approaches an opening, that proves merely a lake of black, muddy water, his ear is assailed by the dismal croaking of innumerable frogs, the hissing of serpents, or the bellowing of alligators! Would that I could give you an idea of the sultry, pestiferous atmosphere that nearly suffocates the intruder during the meridian heat of our dog-days in those gloomy and horrible swamps! But the attempt to picture these scenes would be vain: nothing short of ocular demonstration can impress any adequate idea of them.

"The flight of this bird is graceful in the extreme, although seldom prolonged to more than a few hundred yards at a time, unless when it has to cross a large river, which it does in deep undulations, opening its wings at first to their full extent, and nearly closing them to renew the propelling impulse. The transit from one tree to another, even should the distance be as much as a hundred yards, is performed by a single sweep, and the bird appears as if merely swinging itself from the top of the one tree to that of the other, forming an elegantly-curved line. At this moment all the beauty of the plumage is exhibited, and strikes the beholder with pleasure. It never utters any sound whilst on the wing, unless during the love season; but at all other times, no sooner has this bird alighted, than its remarkable voice is heard, at almost every leap which it makes, whilst ascending against the upper parts of the trunk of a tree, or its highest branches. Its notes are clear, loud, and yet rather plaintive. They are heard at a considerable distance, perhaps a mile, and resemble the false high note of a clarionet. They are usually repeated three times in succession, and may be represented by the monosyllable *pait, pait, pait*. These are heard so frequently as to induce me to say that the birds spend few minutes of the day without uttering them; and this circumstance leads to its destruction, which is aimed at, not because (as is supposed by some) this species is a destroyer of trees, but more because it is a beautiful bird, and its rich scalp, attached to the upper mandible, for an ornament for the war-dress of most of our Indians, or for the short pouch of our squatters and hunters, by all of whom the bird is shot merely for that purpose. Travellers of all nations are also fond of possessing the upper part of the head and the bill of the male; and I have frequently remarked, that on a steam-boat's reaching what we call a *wooding-place*, the strangers were very ready to pay a quarter of a dollar for two or three heads of this woodpecker. I have seen entire belts of Indian chiefs closely ornamented with the tufts and bills of this species, and have observed that a great value is frequently put upon them. The food of this species consists principally of beetles, larvæ, and large grubs. No sooner, however, are the grapes of our forests ripe, than they are eaten by the ivory-billed woodpecker with the greatest avidity. I have seen this bird hang by its claws to the vines, in the position so often assumed by a titmouse, and reaching downwards, help itself to a bunch of grapes with much apparent pleasure. Persimons are also sought for by them, as soon as the fruit becomes quite mellow, as are hay-berries. The ivory-bill is never seen attacking the corn or the fruit of the orchards, although it is sometimes observed working upon and chipping off the bark from the belted trees of the newly-cleared plantations. It seldom comes near the ground, but prefers at all times the tops of the tallest trees. Should it, however, discover the half-standing broken shaft of a large dead and rotten tree, it attacks it in such a manner as nearly to demolish it in the course of a few days. I have seen the remains of some of these ancient monarchs of our forest so excavated, and that so singularly, that the tottering fragments of the front appeared to be merely supported by the great pile of chips by which its base was surrounded. The strength of this woodpecker is such, that I have seen it detach pieces of bark seven or eight inches in length at a single blow of its powerful bill, and by beginning at the top branch of a dead tree, tear off the bark to an extent of twenty or thirty feet in the course of a few hours, leaping downwards with its body in an upward position, tossing its head to the right and left, or leaning it against the bark to ascertain the precise spot where the grubs were concealed, and immediately after renewing its blows with fresh vigour, all the while sounding its loud notes as if highly delighted.

"When wounded and brought to the ground, the ivory-bill immediately makes for the nearest tree, and ascends it with great rapidity and perseverance, until it reaches the top branches, when it squats and hides, generally with great effect. Whilst ascending, it moves spirally round the tree, utters its loud *pait, pait, pait,* at almost every hop, but becomes silent the moment it reaches a place where it conceives itself secure. They sometimes cling to the bark with their claws so firmly, as to remain cramped to the spot for several hours after death. When taken by the hand, which is rather a hazardous undertaking, they strike with great violence, and inflict very severe wounds with their bill, as well as claws, which are extremely sharp and strong. On such occasions this bird utters a mournful and very piteous cry."

Nuttall states that this bird is a constant resident in the countries where it is found, in the warmer regions breeding in the rainy season, and that the pair are believed to be united for life. "More vagrant," says Nuttall in continuation, "and independent than the rest of his family, he is never found in the precincts of cultivated tracts; the scene of his dominion is the lonely forest, amidst trees of the greatest magnitude. His reiterated trumpeting note, somewhat similar to the high tones of the clarionet (*pait, pait, pait, pait*), is heard soon after day and until a late morning hour, echoing loudly from the recesses of the dark cypress swamps, where he dwells in domestic security, without showing any impertinent or unnecessary desire to quit his native solitary abodes. Upon the giant trunk and moss-grown arms of this colossus of the forest, and amidst inaccessible and almost ruinous piles of mouldering logs, the high, rattling clarion, and repeated strokes of this princely woodpecker are often the only sounds which vibrate through, and communicate an air of life to, these dismal wilds. His stridulous interrupted call, and loud industrious blows may often be heard for more than half a mile, and become audible at various distances, as the elevated mechanic raises or depresses his voice, or as he flags or exerts himself at his laborious employment. His retiring habits, loud notes, and singular occupation, amidst scenes so savage yet majestic, afford withal a peculiar scene of solemn grandeur, on which the mind dwells for a moment with sublime contemplation, convinced that there is no scene in nature devoid of harmonious consistence. Nor is the performance of this industrious hermit less remarkable than the peals of his sonorous voice, or the loud choppings of his powerful bill. He is soon surrounded with striking monuments of his industry: like a real carpenter (a nick-name given him by the Spaniards), he is seen surrounded with cart-loads of chips and broad flakes of bark, which rapidly accumulate round the roots of the tall pine and cypress where he has been a few hours employed; the work of half a dozen men, felling trees for a whole morning, would scarcely exceed the pile he has produced in quest of a single breakfast upon these insect larvæ which have already, perhaps, succeeded in deadening the tree preparatory to the repast. Many thousand acres of pine-trees in the southern states have been destroyed in a single season by the insidious attacks of insects, which, in the dormant state, are not larger than a grain of rice. It is in quest of these enemies of the most imposing part of the vegetable creation that the industrious and indefatigable woodpecker exercises his peculiar labour. In the sound and healthy tree he finds nothing which serves him for food."



THE GREATER SPOTTED WOODPECKER.*

According to the editor of Pennant's British Zoology, this species puts the point of the bill into a crack or the limb of a large tree, and makes a quick tremulous motion with its head, thereby occasioning a sound as if the tree was splitting, which alarms the insects, and induces them to quit their recesses. This action it repeats during the spring in the same spot, every minute or two for half an hour, and the bird will then fly to another tree, generally fixing itself near the top, for the same purpose.

The noise thus made, the writer says, may be distinctly heard for half a mile, and he remarks that the bird will also keep its head in very quick motion, while moving about the tree for food, jarring the bark, and shading it at the same time it is seeking for insects. Bechstein says, that the food of this species consists of insects, beech-mast, acorns, nuts, and the seed of pines and firs, and that, in order to crack nuts, it fixes them in the clefts of the trees.

The eggs, which are glossy white, and from four to six in number, are deposited at the bottom of the hole in a tree upon the decayed wood. On one occasion it was with difficulty the bird was made to quit her eggs; for notwithstanding a chisel and mallet were used to enlarge the hole, she did not attempt to fly out till the hand was intruded, when she quitted the tree at another opening. This species more frequently makes that jarring noise for which the woodpeckers are distinguished than any of the others, especially when disturbed from the nest.

Mr. Gould says they are sometimes observed to alight upon rails, old posts, and decayed pollards, where, among the moss and other vegetable matters, they find a plentiful harvest of spiders, ants, and other insects; nor are they free from the charge of committing great havoc among cherries, plums, and wall-fruit in general.

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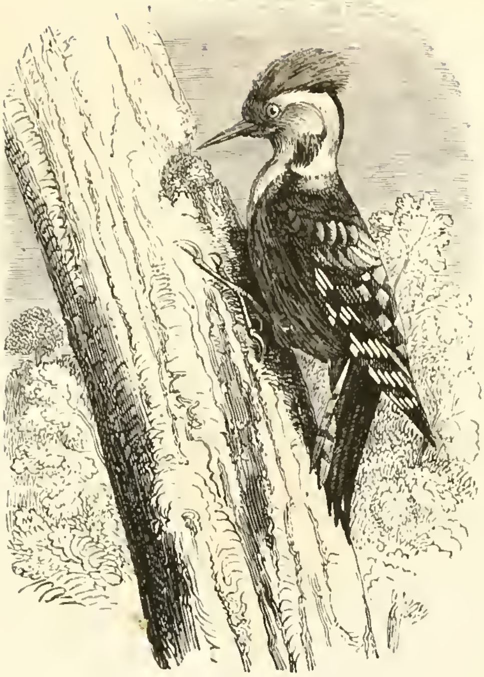
* Picus Major.



THE LESSER SPOTTED WOODPECKER.*

Woods, orchards, nursery gardens, and well-timbered parks are the haunts of this pretty little bird. "In England," says Mr. Gould, "it is far more abundant than is generally supposed; we have seldom sought for it in vain wherever large trees, particularly the elm, grow in sufficient numbers to invite its abode: its security from sight is to be attributed more to its habit of frequenting the topmost branches than to its rarity. Near London it is very common, and may be seen by an attentive observer in Kensington Gardens, and in any of the parks of the neighbourhood. Like many other birds whose habits are of an arboreal character, the lesser spotted woodpecker appears to perform a certain daily round, traversing a given extent of district, and returning to the same spot whence it began its route. Besides the elm, to which it is especially partial, it not unfrequently visits orchard trees of large growth, running over their moss-grown branches in quest of the larvæ of insects which abound in such situations. In its actions it is very lively and alert. Unlike the large woodpecker, which prefers the trunks of trees, it naturally frequents the smaller and more elevated branches, which it traverses with the utmost ease and celerity: should it perceive itself noticed, it becomes shy, and retires from observation by concealing itself behind the branch on which it rests; if, however, earnestly engaged in the extraction of its food, its attention appears to be so absorbed that it will allow itself to be closely approached without suspending its operations. When spring approaches, it becomes clamorous and noisy, its call being an oft-repeated note, so closely resembling that of the wry-neck as to be scarcely distinguishable from it. At other times of the year it is mute, and its presence is only betrayed by the reiterated strokes which it makes against the bark of trees."

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* Picus Medius.

THE LARGER RED-CRESTED WOODPECKER.*

These birds are not unfrequent in the well-timbered forests, from Mexico to Canada, at least to the fiftieth degree north. They are resident all the year in the interior of the fur countries up to the sixty-second or sixty-third parallels; rarely appearing near Hudson's Bay, but numerous in the gloomiest recesses of the forests that skirt the Rocky Mountains, in all the United States, particularly in the Gennesee country, in the state of New York.

Catesby says, that these birds (besides insects which they get from rotten trees, their usual food) are destructive to "maize" by pecking holes through the husks that enclose the grain, and letting in the wet. Dr. Richardson states, that the stillness of the primeval shades which this woodpecker frequents is often invaded by the strokes of its powerful bill, which excels the woodman's axe in the loudness of its sound, and still more in the rapidity with which its blows are urged; "nor does it," he adds, "fall far short in the quantity of chips it produces. Like other woodpeckers, he is extremely industrious, seemingly never a moment idle, flying from tree to tree, and plying his head like a hammer the instant that he alights." A few strokes of the bill suffice to indicate the state of the tree; and Dr. Richardson concludes his observations on this species by remarking, that if the bird judges that he would explore the interior in vain, he instantly quits that tree for another.

From the tall trees which cast their giant arms over all the uncleared river lands may often be heard his loud, echoing, and incessant cackle, as he flies restlessly from tree to tree, presaging the approach of rainy weather. These notes resemble *ekerek rek rek rek, rek, rek, rek*, uttered in a loud cadence, which gradually rises and falls. The marks of his industry are also abundantly visible on the decaying trees, which he probes and chisels with great dexterity, chipping off wide flakes of loosened bark, to come at the burrowing insects which chiefly compose his food. In whatever engaged, haste and wildness seem to govern all his motions, and by dodging and flying from place to place as soon as observed, he continues to escape every appearance of danger. Even in the event of a fatal wound, he still struggles with unconquerable resolution to maintain his grasp on the trunk, to which he trusts for his safety, to the very instant of death. When caught by a disabling wound, he still holds his ground against a tree, and strikes with bitterness the suspicious hand which attempts to grasp him, and, resolute for his native liberty, rarely submits to live in confinement. Nuttall states that this species is, without much foundation, charged at times with tasting maize; but in winter, he observes the bird in South Carolina occasionally making a hearty repast on holly and similar berries.

The female lays about six snow-white eggs, in the cavity of a tree. Two broods are said to be produced in a season.

THE WRYNECK.†

When the cuckoo is heard, the wryneck may be looked for; and from their advent and departure about the same time, some of the modern British names, and one of the ancient British appellations, *Gwas y góg*, must have originated, for in other respects there is no relationship or similarity between the birds.

The general habits of the species are well described by Mr. Yarrell, in his "British Birds." He truly remarks, that when found in its retreat, in the hole of a tree, it makes a loud hissing, sets up its crest, and writhing its head and neck towards each shoulder with grotesque contortions (whence its name, *snake-bird*), becomes an object of terror to a timid intruder, when the bird, taking advantage of a moment of indecision, darts with the rapidity of lightning from a situation whence escape seemed impossible.

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* Catesby. The Pileated Woodpecker of Pennant, etc.

† Yunx Toaquilla.

Caterpillars and a variety of insects form the food of the wryneck, and it is a great devourer of ants and their eggs. Elder-berries have been mentioned as being a part of its diet.

Mr. Yarrell thus describes the construction of the tongue and its appendages in this species:—"By an elongation of the two posterior branches of the bones of the tongue, and the exercise of the muscles attached to them, this bird is able to extend the tongue a very considerable distance beyond the point of the beak; the end of the tongue is horny and hard; a large and long gland is situated at the under edge of the lower jaw on each side, which secretes a glutinous mucus, and transfers it to the inside of the mouth by a slender duct. With this glutinous mucus the end of the tongue is always covered, for the especial purpose of conveying food into the mouth by contact. So unerring is the aim by which the tongue is darted out, and so certain the effect of the adhesive moisture, that the bird never fails in attaining its object at every attempt. So rapid, also, is the action of the tongue, in thus conveying food into the mouth, that the eye is unable distinctly to follow it."

Colonel Montagu says: "We were enabled to examine the manners of this bird minutely, by taking a female from the nest, and confining her in a cage for some days. A quantity of mould, with emmets and their eggs, was given it; and it was curious to observe the tongue darted forward and retracted with such velocity, and with such unerring aim, that it never returned without an ant or an egg adhering to it, not transfixed by the horny point, as some have imagined, but retained by a peculiar tenacious moisture by nature provided for that purpose. While it is feeding the body is motionless, the head only is turned to every side, and the motion of the tongue is so rapid that an ant's egg, which is of a light colour, and more conspicuous than the tongue, has somewhat the appearance of moving towards the mouth by attraction, as a needle flies to a magnet. The bill is rarely used except to remove the mould in order to get more readily at these insects: where the earth is hollow the tongue is thrust into all the cavities to rouse the ants; for this purpose the horny appendage is extremely serviceable as a guide to the tongue. We have seen the green woodpecker take its food in a similar manner."

The smooth, shining white eggs—from six to ten in number—are generally deposited in a hole of a tree or the decayed wood. The birds are remarkable for local attachment, as the following anecdote, related by Mr. Salmon, will prove:—"I wished," writes that gentleman, "last spring to obtain the eggs of a wryneck to place in my cabinet, and, accordingly, watched very closely a pair that had resorted to a garden for the purpose of incubation; I soon ascertained that they had selected a hole in an old decayed apple tree for that purpose, the entrance to which was so small as not to admit my hand. The tree being hollow and decayed at the bottom near the ground, I was enabled to reach the nest by putting my arm upwards, and I found, on withdrawing the nest, that the underneath part of it was composed of moss, hair, &c., having every appearance of an old nest of the redstart of the preceding summer, which I suspect was the case; the upper part was made of dried roots. The nest did not contain any eggs, and I returned it by thrusting it up in the inside of the tree. On passing by the same tree about a week afterwards, my attention was arrested by observing one or two birds leaving the hole, upon which I gently withdrew the nest, and was much gratified at finding it contained five most beautiful glossy eggs, the shells of which were perfectly white, and so transparent that the yolks shone through, giving them a delicate pink colour, but which is lost in the blowing. I replaced the nest, and visited it during the ensuing week, and was induced, out of curiosity, to examine it again, when, to my astonishment, I found the birds had not deserted the hole, she having laid six more eggs since. I took these away, and was obliged to keep them, as I was only able to replace the nest by again thrusting it up in the inside of the tree as before, which I did. I again visited the spot in the following week, and found that they had still pertinaciously adhered to their domicile, having further laid four more eggs. I repeated the experiment, but not having an opportunity of visiting the tree until ten days afterwards, I thought at the time that the nest was abandoned, and was not undeceived until I had again withdrawn the nest, having taken the precaution of endeavouring to frighten the old bird off, should she be on the nest, which I found was the case; she suffered me to pull the nest to the bottom of the tree before she attempted to escape: there were seven eggs, which were slightly sat upon. What appears to me extraordinary is, that the bird should suffer her nest to be disturbed five times, and the eggs (amounting altogether to twenty-two) to be taken away at four different periods within the month, before she finally abandoned the spot she had selected."

Colonel Montagu says that the wryneck makes a noise very like the smaller species of hawks, frequently repeating it in spring. Mr. Yarrell describes the note as a sharp sound, repeated several times, and not unlike the whistle of a kestrel.

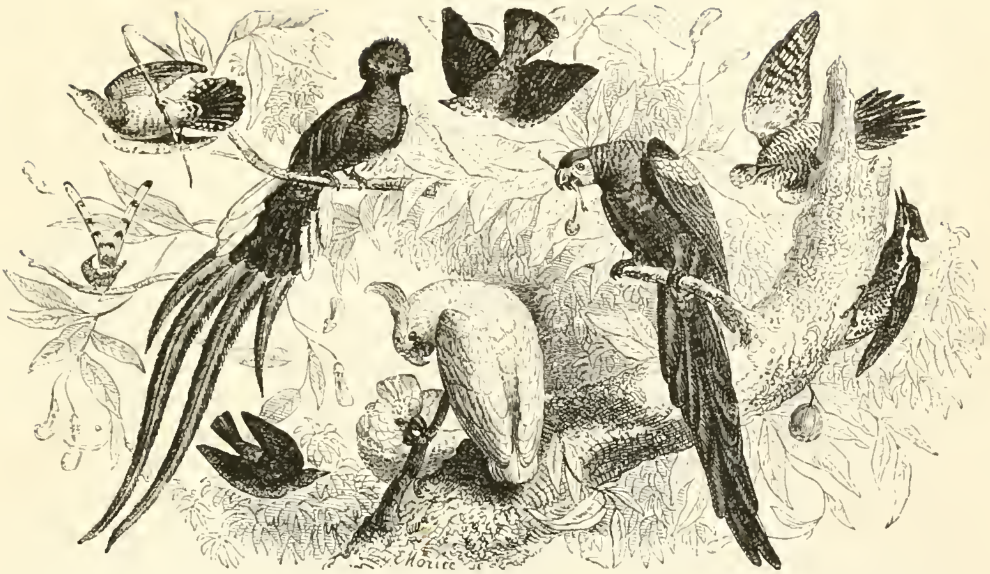
In captivity the wryneck is a favourite; and the bird soon becomes reconciled to the half-reclaimed state in which English and French boys are fond of keeping it, taking it out to the woods with a long string tied to its leg, and suffering it to ascend trees and forage for food generally, within the length of its tether, and letting it climb at intervals about their dress.

In the "Portraits d'Oyseaux" the following quatrain is printed under the cut of this species:—

"*Le Tercot* est au pie verd ressemblant,
De naturel et net de corpulence,
Sa langue longue hors de trois doigts il lance,
Ayant en ce du serpent le semblant."

The last two lines are very nearly a translation from Aristotle.

THE PARROTS.



Another FAMILY of the Order now under consideration is that of the PSITTACIDÆ, or PARROTS.

The birds of this genus possess, in an eminent degree, the character of the order in which they are placed. They are climbers in the fullest sense of the word. Their toes, constantly four in number, are opposed two to two, and armed with solid and crooked claws—less so, however, than the claws of the birds of prey. The two anterior toes are united at their base by a small membrane; the hinder are completely separated. The tarsi, in the majority of species, are very short, but in some they are elongated in a proportion nearly equal to that of the insessores in general. Their skin is scaly, as is that of the toes; the wings are usually shut; the tail is more or less long, and assumes a variety of forms; the colours of the plumage are almost always brilliant.

In the majority of this family, we find a plumage which, for richness and variety of colour, yields to few of the feathered race; and though, like the tulip among flowers, it may be thought gaudy, and composed of colours too violently and abruptly contrasted to give that satisfaction to the eye which a more chastened, or rather less abrupt, intermixture of tints is wont to produce, still we think no one can examine or look at some of the gorgeously decked maccaws, the splendid and effulgent lories, or the diversified tints of the Australian parakeets, without acknowledging them to be among the most beautiful and striking of the feathered race.

The upper mandible, which is immoveable in mammals, has more or less motion in birds. Some birds indeed, for instance the capercailzie and rhinoceros birds, are not gifted with this motion; but mobility of the upper mandible is the rule in this class, and the want of it the exception. In the *Psittacidæ* this power is highly developed; for the upper mandible is not connected into one piece with the skull, by yielding and elastic bony plates, as is the case with birds in general, but constitutes a particular bone, distinct from the rest of the cranium, and articulated to it.

The advantages derived to the animal from this conformation are obvious to any one who watches a parrot taking its food or using the bill as a third extremity to assist it in climbing about its cage. In most birds there is a progressive increase in the number of the phalanges of the toes; thus the great toe has two, the next three, the middle toe four, and the outer toe five. The parrots possess a peculiar cross-bone belonging to the great toe. In common with the pigeon and some other birds, they are destitute of a gall bladder. Their intestines are very long, and are without cæca. The soft thick tongue, so characteristic of this tribe, must be a highly sensitive organ of taste. It is covered with papillæ, and moistened with a salivary secretion, so that they are able to taste and select different articles of food. In some of the forms, the *Trichoglossi*, for instance, which feed on the nectar of flowers, the brush-like tongue is fringed with tubular processes, in conformity with the suctorial mode of feeding adopted by those birds. One of them, kept by Mr. Caley, on seeing the coloured drawing of a plant, made an attempt to suck the flowers, and evinced the same disposition towards a piece of cotton furniture. The accurate observer last mentioned supplied the *Psittacus Pusillus*, Lath., a species of the same genus, with honey and moistened sugar, which it sucked with ease and apparent pleasure, by means of its brush-like tongue. In the Museum of the College of Surgeons there is one of these tubular tongues described as the tongue of a lory.* The tongue is short, thick, and fleshy, as in most of the parrot tribe; but it is further distinguished as terminating in a number of very delicate and close-set filaments, which can be protruded and expanded like a brush.

The large, hard, and solid bill, rounded throughout, and surrounded at its base with a membrane wherein the nostrils are pierced, together with the thick, fleshy, and rounded tongue, gives the Psittacidæ, as Cuvier observes, the greatest facility in imitating the human voice, a facility to which the complicated lower larynx, with its three peculiar muscles on each side, contributes. Their strong mandibles, formed for shelling and cracking the hardest fruits, are worked by more numerous muscles than those of other birds.

The eyes of the parrots are moderately large, and situated laterally. The upper and lower lids form a rounded orifice, edged with small tubercles supporting the lashes in its entire circumference. The upper is evidently mobile; the third lid, or nictitating membrane, is very small, and the parrots are never seen to make use of it. The pupil is round, and not situated exactly at the centre of the iris, but more inward; so that the iris is a little broader at its external than its internal side. The colour of this last varies according to the species, but it is generally remarked to grow deeper with increasing age. A peculiar character of the parrots is the ability of contracting the pupil, more or less, independently of the action of the light, when they turn their attention to any object, when they feel any fear or anger, or even when they are in a sportive mood. These birds are evidently diurnal.

In certain birds of this genus, the cheeks are naked of feathers, and covered with a white farinaceous powder, as is remarked in the maccaws; or the skin is coloured, as in the *Microglossi*. The circumference round the eye in others is more or less divested of feathers, and also covered with a white sort of farina. This appears to be an epidermic production, and is very abundant on other parts of the skin of these birds, whose plumage, when they shake it, gives out a considerable quantity of white dust. The quantity of mealy dust discharged from the skin by the cockatoos, and other species of parrots, particularly at pairing time, is remarkable; though the separation of this peculiar matter from the skin is not confined to this family, but is effected by many birds of different orders, eagles and herons for instance. The cockatoos and others have the head ornamented with long and slender plumes, which can be elevated in the form of a tuft or crest, according to the inclination of the bird, but which, in general, are inclined along the neck. The neck is usually but of moderate length, sometimes it is even short, and tolerably thick; still, when the parrots wish to reach an object without changing their place, they are able to elongate the neck to a certain extent.

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* Lorius Domicella.—Vigors.

The body varies in degrees of robustness or elegance according to the species. In the parrots proper, it seems thicker than in the others, which, perhaps, is only the effect produced by the shortness and the strength and solidity of the tibia, toes, and tarsi. Some long-tailed parakeets, on the contrary, are distinguished by the fineness of their form and the elegance of their proportions. The breast of these birds is usually broad and rounded.

The wings are short, and their point rarely exceeds one-half the length of the tail, even in species in which the tail is shortest. The first three remiges are the largest of all, and pretty nearly equal with each other.

There are differences in the tail as to the greater and less extent of the various quills which compose it, and which are twelve in number. As to its total size, it is either shorter than, equal in length to, or larger than the body, comprising the head and neck. In form it is sometimes straight or squared, when all the quills are of equal length; sometimes round, sometimes graduated, and sometimes arrow or spear-headed. Sometimes it is peculiarly broad at the end; some species have the caudal quills sharp at their terminations; and sometimes the tail is very short, and at the same time graduated.

Though the feet of the parrots are robust, and the toes well adapted for climbing, there are to this some exceptions. In such instances, the birds remain constantly on the ground, where they walk with swiftness, which the other birds cannot do. The legs of parrots are usually feathered to the heel, but there are instances in which the body of the leg is bare. The colour of the feet is usually gray, but it is in some roseous, brown, or black.

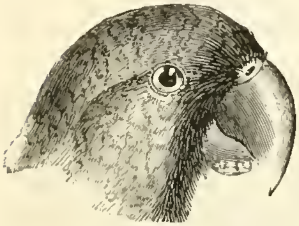
The colours of the plumage of the parrots are exceedingly varied, and almost always pure and brilliant. In this respect, the adult females often differ from the males; while the young in their first or second livery, and even after the third moulting, present characters peculiar to themselves. Green is, in general, the predominating colour; then comes red, then blue, and finally yellow. This last colour appears among the parrots to be the general substitute for the white observed in other birds; and it is remarkable that in many of the species there are varieties uniformly yellow. Very often, when the feathers are plucked, red and yellow ones will shoot forth, whatever may have been the colour of the former. There are some species violet, purple, brown, or lilac-coloured. Some are known whose plumage is entirely gray; some have it black; and some, in fine, entirely white. The plumage of this extensive family is of the most rich and varied description, embracing almost every colour and gradation of tint. The Zoological Society of London possesses one of the finest, if not the finest, living collections of these birds in the world.

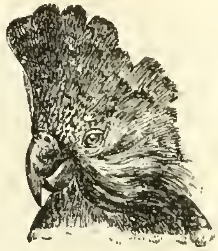
America, Brazil, and Guiana are the countries which contain the greatest number of species of parrots, all of them belonging to the division of parakeets; that of the parrots proper, and that of the psittaculi. The maccaws are exclusively confined to these countries. It does not appear that any birds of this genus are found on the chain of the Cordilleras; they are not very numerous even in Paraguay. Some species belong to the islands in the Gulf of Mexico; and it is not improbable that some may exist in the Floridas. On the other side of the Andes, from Chili to California, more appear to have been noticed; but many exist in Chili, on the shores of the southern ocean.

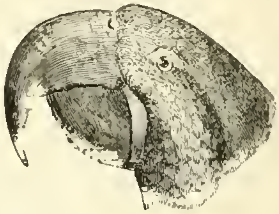
Many birds of this genus belong to the African continent, from Senegal as far as the forests which are near to the Cape of Good Hope. They are, however, fewer in number than those of India and America. The Barbary coasts, from Morocco as far as Egypt, that is, the entire chain of Atlas, and the northern reverse of that chain, are destitute of them. There are some in Madagascar, but none in the Canary isles.

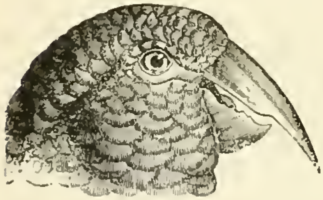
In Asia, parrots are found in Hindostan and its dependent islands, in Cochin China, in China, and in the eastern Archipelago. There the handsomest and largest species, and those most remarkable for their forms, are in abundance.

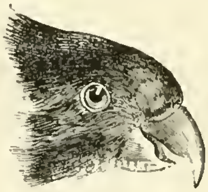
In Polynesia, this genus is considerably extended. Australia has species peculiar to itself. These birds are also numerous in New Zealand, the Macquarrie Islands, and in the groups of the Friendly and Society Islands. The lories are peculiar to the Philippines and New Guinea, and the psittaculi, with the tongue terminated by a pencil of cartilaginous filaments, belong to the countries which extend from New Holland to the Friendly Islands.

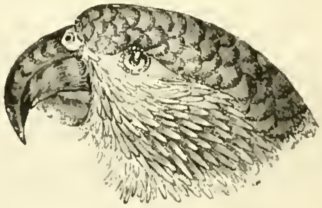

HEAD OF MASCARINUS.—LESSON.

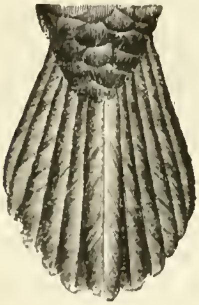

HEAD OF PSITTACUS ACCIPITRINUS.—GMELIN.

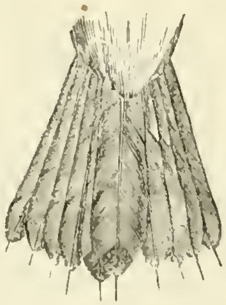

HEAD OF MACROCERCUS HYACINTHINUS.—VIELL.

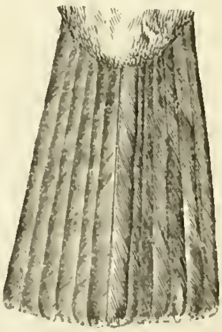

HEAD OF ENICOGNATHUS LEPTORHYNCHUS.—KING.


HEAD OF PSITTACULA PULLARIA.—LESSON.


HEAD OF NESTOR OF NEW ZEALAND.—LESSON.


TAIL OF THE MICROPSITTA PYGMÆA.—LESSON.


TAIL OF LORIUS.—BRISSON.


TAIL OF VAZA.—LESSON.

Europe, all the northern and central regions of Asia, the polar countries, Greenland, Iceland, the northern and temperate parts of America, Kerguelin's Land, and the South Shetlands, are almost the only portions of the globe in which the family of the parrots has no representative.

There is a striking analogy between the Scansorial tribe of birds, and more especially the great family of parrots, and the monkeys among the Mammalia. It does not depend, however, in so great a degree as is sometimes imagined, on the imitative talents for which these tribes of animals have been celebrated from the earliest times; for in the one case it is the voice, and in the other it is the actions of man, that have been made the subjects of imitation. The analogy will be peculiarly apparent if due consideration be given to the peculiar mode of the existence of these creatures; to the nature of their food; to the situations which they frequent; and to the occupations which they pursue. The organisation of both renders them peculiarly the inhabitants of trees.

It is evident, for instance, that their geographical distribution is nearly the same, extending, in both cases, throughout the whole of the torrid zone, and but little beyond its limits. Nor is it less obvious that both tribes are possessed of a higher share of docility and intelligence than is found in any other family of the classes to which they respectively belong.

One of the most important characters, as affecting their mode of life, is that which is derived from the structure of their feet. In the monkeys these organs are essentially fitted for climbing from branch to branch and leaping from tree to tree—acts which are performed with the greatest agility; while their progression on the surface of the ground is generally awkward and constrained. In like manner, the far greater number of parrots are incapable of treading the earth with ease, while the peculiar disposition of their toes and the strong curvation of their claws enable them to grasp, with a firmness unequalled among birds, the branches on which they perch, and, consequently, to climb with singular dexterity. Occasionally they derive considerable assistance from their bills, by means of which they not unfrequently suspend themselves from the branches, or support themselves during their descent from one to another. This is peculiarly the case with the American groups; and the prehensile tails of many American monkeys afford a similar support, enabling them to swing from branch to branch, almost without the assistance of their hands.

Both parrots and monkeys derive the principal part of their subsistence from the trees which they inhabit, vegetable food being the most adapted to their organisation, and fruits being generally preferred by them to any other kind of nutriment. Stone-fruits or nuts are especially acceptable, and they display no little dexterity in stripping off the outer coverings to arrive at the kernels, of which they are excessively fond. They both attack the cultivated fruits of the plantation in numerous bands, and commit much wanton devastation in the progress of their pillage, frequently destroying ten times as much as they devour. In eating, too, the parrot, like the monkey, often carries its food to its mouth by means of its foot, which is thus made to serve the purpose of a hand. The tallest trees of the forest form their place of refuge, and on these both the one and the other assemble in considerable numbers, the noisy chattering and antic gestures of the monkeys being fully equalled by the hoarse cries and affected postures of the parrots. And thus we see that there are various respects in which the portion of the "Feathered Tribes" now under consideration resemble the Quadrumana.

As the wings of the parrots are generally short, and their bodies bulky, they have some difficulty in rising to a certain point of elevation; but that once attained, they fly very well, and often with much rapidity, and through a considerable extent of space. The majority confine themselves to lofty and thickly-tufted woods, frequently on the borders of cultivated lands, the productions of which they plunder and destroy. Their ordinary mode of flight is from one branch to another; and it frequently happens that they will not fly continuously, except when pursued. Many of them emigrate according to the season, and, in particular, the Carolina parrots. Such travel away for some hundreds of leagues, differing in this respect from the habits of others; but they are comparatively few in number. The difficulty of flight with many is the cause of their restriction within narrow limits, and their concentration in certain islands, while they are not found in others which closely border upon the former. This is peculiarly the case with many of the island groups of Polynesia.

The food of the parrots consists principally of the pulps of fruit, such as those of the banana, the coffee-tree, the palm, and the lemon. They are especially fond of almonds; generally they attack the pulp only to get at the kernel; this, when once seized, is fixed on the under wrinkled surface of the upper mandible; they turn it repeatedly until it is placed on the tongue in the proper direction for the introduction of the trenchant edge of the lower mandible; then the bird soon forcibly separates the valves of the almond-shell, and getting the almond into its bill, soon divides it, so that all its envelopes are rejected. The fragments are finally swallowed in succession. Some of this family are said to live on roots, and others to seek their aliment in herbs.

When domesticated, the parrots, maccaws, parrakeets, and cockatoos, show the same partiality for vegetable seeds, and are generally fed very well on hemp-seed, the skins or husks of which they detach with astonishing skill. Some that receive bones to gnaw, acquire a very determined taste for animal substances, and especially for the tendons, ligaments, and other less succulent parts. From this kind of feeding, some parrots contract the habit of plucking out their own feathers that they may suck the stems; and this becomes so urgent a want, that instances have been known of their stripping their bodies absolutely naked, not leaving a vestige of down wherever the bill could reach. They spared, however, the quills of the wings and tail, the plucking out of which would have caused them too much pain. M. Desmarest states, that the body of one of these birds, belonging to M. Latreille, thus became as naked as a pullet plucked for roasting. Yet this bird supported the rigour of two very severe winters without the slightest alteration of health and appetite. M. Vieillot observes, that this habit of deplumation is produced, in many parrots, by an itching of the skin, and not in consequence of their being accustomed to eat animal substances.

The parrots drink little, but often, and do so raising up the head, but less strongly than in other birds. They all use, with great dexterity, one of their feet to carry their food to their bills, while they stand perched on the other. They sojourn much on the borders of streams and rivers, and in marshy places. They are fond of the water, and seem to take the greatest delight in bathing themselves—an operation which they perform several times a day when in a natural state. When they have bathed, they shake their plumage until the greater portion of the water is expelled, and then expose themselves to the sun until their feathers are completely dried. In captivity, and even during the most rigorous seasons, they seek to bathe, and at all events plunge the head repeatedly into water.

With the exception of the time of incubation, the parrots live in flocks, more or less numerous; go to sleep at the setting, and awake at the rising of the sun. In sleep, they turn the head upon the back. Their sleep is light, and they are not unfrequently heard to utter some cries during the night. In a state of domestication, after they go to rest is said to be the most suitable time for repeating to them such words as they are intended to learn, because they then experience no distraction.

Their life is very long, and the mean duration of it, among the parrots properly so called, is calculated at forty years. Instances have, however, been known of individuals who lived in a state of domestication for ninety or a hundred years, or even more. The parrakeets live, generally, about five and twenty years. An effect of captivity, in some species, is, according to M. Vaillant, to change the colour of their plumage; and to this cause he attributes the frequent varieties observable among these birds.

The birds of this genus are monogamous. They make their nests in the trunks of rotten trees, or in the cavities of rocks; and compose them, in the first instance, of the *detritus*, or dust, of the worm-eaten wood, and of dry leaves in the second. The eggs are not numerous; usually only three or four each time; but there are broods several times in the year. The young when born are totally naked; and the head is so large, that the body seems to be merely an appendage to it. They remain some time without having sufficient strength to move it. They are subsequently covered with down, but are not completely invested with feathers for two or three months. They remain with their parents till after the first moulting, and then leave them for the purpose of pairing. The eggs are ovoid, short, as thick at one end as the other; and those which are known are of a white colour. Some of them are nearly equal in size to those of a pigeon.

It was for a long time supposed that the increase of these birds could take place only in their native country. Many parrots, however, were born in Europe so far back as 1740 and 1741. In 1801, some Amazon parrots were born at Rome. M. Lamouroux has given us considerable details respecting the broods of two blue maccaws that were at Caen some years ago. In four years and a half, these birds laid sixty-two eggs in nineteen broods. Of this number, twenty-five eggs produced young ones, of which ten only died. The others lived, and became perfectly accustomed to the climate. They laid eggs at all seasons; and the broods became more frequent and more productive in the course of time, and in the end much fewer were lost.

The number of the eggs in the nest used to vary, six having been together at a time; and these maccaws were seen to bring up four young ones at once. These eggs took from twenty to twenty-five days to be hatched, like those of our common hens. Their form was that of a pear, a little flattened, and their length equal to that of a pigeon's egg. It was only between the fifteenth and five and twentieth day that the young ones became covered with a very thick down, soft, and of a whitish slatey gray. The feathers did not begin to make their appearance until towards the thirtieth day, and took two months to acquire their full growth. It was twelve before the young arrived at the state of their parents, but their plumage had all its beauty from six months old. At three months old they abandoned the nest, and could eat alone; up to this period they had been fed by the father and mother, who disgorged the food from the bill in the same manner as the pigeons do.

It is probable that the success of this education was owing to the care which was taken in providing these birds with a suitable nest. This consisted of a small barrel, pierced towards the third of its height with a hole of about six inches in diameter, and the bottom of which contained a bed of sawdust three inches thick, on which the eggs were laid and hatched. Since the time now referred to, Collared parrakeets of Senegal, and Pavonian parrakeets, have been hatched in Paris, in hollows made in large billets of wood, where the parent-birds had fixed their nests.

Parrots, parrakeets, and other birds of the same family, which are imported into Europe, are generally taken young in the nest, and brought up in their native country. Some are taken adult; they are caught when inebriated by eating the seed of the cotton-tree, which they are very subject to become; or they are brought down by arrows, which, having a button on the end, stun without killing them. M. D'Azara states, that the natives of Paraguay take them in a manner which appears very singular, if not incredible. They attach one or two pieces of wood to a tree frequented by these birds for the sake of its fruit. They put a stick or two across from these pieces of wood as far as the tree, and construct with palm-leaves a sort of cabin, sufficiently large to conceal the fowler. He has with him a tame parrot, which by its cries attracts the wild ones of the forest, and the last never fail to come at the voice of the prisoner. The hunter, without loss of time, passes round their necks a running knot, attached to the end of a long wand, which he moves from within his cabin. If he has five or six of these wands, he can take as many parrots, for they will not attempt to escape, unless the cord presses tightly on their necks.

All these birds are susceptible of education, but the young are more so than the old. The means employed consist in imposing certain punishments upon them, such as immersing them in very cold water, of which they are greatly afraid, or puffing at them with tobacco smoke. Rewards are also used, and when they perform what is desired, such things are given them as they prefer, more especially sugar and sweet wine. They are tamed and kept obedient by taking them with boldness, and speaking to them with authority and in a loud tone of voice.

They may thus be taught to perform various gestures and assume different postures. Some will lie down on their backs, and rise only at the master's command; others will perform exercises with a stick, or dance in a manner more or less grotesque. They are taught by constantly repeating close to them such words as they are wished to learn. Success, however, does not always depend on such endeavours. Some species are better disposed than others for this kind of education, and the same is the case with different individuals of the same species.

In no case should the greatest attainments of these birds be ranked too highly. Their imitative powers do not of themselves entitle them to any marked superiority over others, and still less to the possession of anything approaching to human intelligence. The imitation is nothing but an organic mimicry, depending, certainly, on the conformation of the voice, and, probably, on some peculiar aptitude of the ears. Nor should it be overlooked that the capacity of articulating words is not exclusively confined to this genus. Pies, jays, blackbirds, stares, and others, and even small birds, can imitate human speech, more or less, from organic facility, rather than the possession of any superior intelligence. The ear of such animals, though different from ours, has the power of delicately appreciating sounds. This faculty is observable among certain individuals of our own species, and it is scarcely necessary to remark, that neither that power, nor a facility of mimicking sounds in general, is always accompanied by a marked intellectual superiority. The reverse, indeed, is often strikingly remarkable.

It is admitted, however, that the parrots have a great superiority over birds in general in their relation to man. They attach themselves to those who tamed them, display aversion to those who have ill-treated them, and that with marked discrimination. It has been said that the males attach themselves to women in preference to men, and exhibit much ill-temper towards the latter; while exactly the reverse takes place with the females. M. Vieillot declares the assertion to be well founded, and instances the case of a male ash-coloured parrot, in his own possession, which he never could approach without being provided with thick leather gloves; and yet the bird was perfectly obedient, in all respects, to Madame Vieillot, and exhibited the greatest fondness towards that lady; while, on the other hand, a female of the same species showed great attachment to the naturalist.

THE ASH-COLOURED OR GRAY PARROT.*

This well-known species, though not conspicuous for the brilliancy and variety of plumage which distinguish the great majority of the tribe, is remarkable for its docility and mimicry, the faculty it possesses of imitating the human voice, as well as any other sound, its never-ceasing garrulity, and its clear and distinct articulation. In most of these particulars it surpasses the rest of its congeners, on which account it has always been held in high estimation by the bird-fancier and lover of living curiosities. This we learn from the large sums which have at all times been offered and paid for highly-gifted or well-taught individuals. Even as early as A.D. 1500, we read of a parrot at Rome, supposed to be of this species, for which one hundred gold pieces were given by a cardinal. Its merits, however, appear to have been of a kind well calculated at that period to create an unusual degree of astonishment, and a feeling of the marvellous, as it is said to have learned to repeat with clearness, and without hesitation, the whole of the Apostles' Creed. Willughby, also, in his old and excellent work on Ornithology, mentions the high prices brought by parrots of various species in Holland and other parts of the Continent.

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* Psittacus Erythacus.—Linn.

A person named O'Kelly had an affection for a parrot, which is stated to have been a very remarkable bird. He gave fifty guineas for it at Bristol, and paid the expenses of the woman who brought it up to town. It is reported not only to have uttered what is usually termed "everything," but to have sang with great correctness a variety of tunes, and beat time as he sang; and if perchance he mistook a note in the tune, he returned to the bar wherein the mistake arose, and corrected himself, still beating the time with the utmost exactness. He sang, it is said, any tune desired, fully understanding the request made.

There is one, however, which is occasionally brought from Brighton to Hampton Court, that appears to equal it in intelligence and power of imitation. Mr. Jesse says:—"I have seen and heard so much of this bird, that I requested the sister of its owner to furnish me with some particulars respecting it, and I now give the account in her own agreeable manner of stating it. I will only add, that its accuracy need not be doubted.

"As you wished me to write down whatever I could collect about my sister's wonderful parrot, I proceed to do so, only promising that I will tell you nothing but what I can vouch for having myself heard. Her laugh is quite extraordinary, and it is impossible not to help joining in it oneself, more especially when in the midst of it she cries out, 'Don't make me laugh so; I shall die, I shall die;' and then continues laughing more violently than before. Her crying and sobbing are curious, and if you say, 'Poor Poll, what is the matter?' she says, 'So bad, so bad; got such a cold;' and after crying for some time, will gradually cease, and, making a noise like drawing a long breath, say, 'Better now,' and begin to laugh.

"The first time I ever heard her speak was one day when I was talking to the maid at the bottom of the stairs, and heard what I then considered to be a child call out, 'Payno' (the maid's name), 'I am not well, I am not well:' and on my saying, 'What is the matter with that child?' she replied, 'It is only the parrot; she always does so, when I leave her alone, to make me come back;' and so it proved, for on her going into the room the parrot stopped, and then began laughing quite in a jeering way.

"It is singular enough, that whenever she is affronted in any way she begins to cry, and when pleased, to laugh. If any one happens to cough or sneeze, she says, 'What a bad cold.' One day, when the children were playing with her, the maid came into the room, and on their repeating to her several times things which the parrot had said, Poll looked up and said quite plainly, 'No, I didn't.' Sometimes, when she is inclined to be mischievous, the maid threatens to beat her, and she often says, 'No you won't.' She calls the cat very plainly, saying, 'Puss, puss,' and then answers, '*Mew;*' but the most amusing part is, that whenever I want to make her call it, and to that purpose say, 'Puss, puss,' myself, she always answers, '*Mew,*' till I begin mewing; and then she begins calling 'Puss' as quick as possible. She imitates every kind of noise, and barks so naturally that I have known her to set all the dogs on the parade at Hampton Court barking; and I dare say, if the truth was known, wondering what was barking at them; and the consternation I have seen her cause in a party of cocks and hens, by her crowing and chuckling, has been the most ludicrous thing possible. She sings just like a child, and I have more than once thought it was a human being; and it is most ludicrous to hear her make what one should call a false note, and then say, 'Oh la,' and burst out laughing at herself, beginning again quite in another key. She is very fond of singing, 'Buy a broom,' which she says quite plainly; but in the same spirit as in calling the cat, if we say, with a view to make her repeat it, 'Buy a broom,' she always says, 'Buy a *brush*,' and then laughs as a child might do when mischievous. She often performs a kind of exercise which I do not know how to describe, except by saying, that it is like the lance exercise. She puts her claw behind her, first on one side and then on the other, then in front, and round over her head, and whilst doing so keeps saying, 'Come on, come on;' and when finished, says, 'Bravo, beautiful!' and draws herself up. Before I was as well acquainted with her as I am now, she would stare in my face, and then say, 'How d'ye do, ma'am?' This she invariably does to strangers. One day I went into the room where she was, and said, to try her, 'Poll, where is Payne gone?' and to my astonishment, and almost dismay, she said, 'Down stairs.' I cannot at this moment recollect anything more that I can vouch for myself, and I do not choose to trust to what I am told; but from what I have myself seen and heard, she has almost made me a believer in transmigration.

"In addition to this account, I may mention, that the Rev. Dr. Hooker, of Rottingdean, near Brighton, has a parrot which evinces almost equal sagacity. If a piece of tape is given it, it weaves it into a sort of basket, and will tie a knot with its beak and foot."

The imitative propensity of the parrot, amusing as it in general may be, is, however, sometimes to be guarded against, from its being productive of untoward accidents, as the following instance will show. A parrot, which was kept upon a quay in a seaport town, had learned the term, with its appropriate enunciation, used by carters in backing—that is, making the horse, by a retrograde motion, place the cart or waggon in the most convenient station for loading or unloading. This term the bird one day made use of when a cart and horse had imprudently been left unattended for a short time, and the horse, obeying the mandate of the bird, continued to keep moving backwards till both were precipitated over the quay, and the unfortunate animal was drowned.

The gray parrot is a native of Western Africa, from whence it appears to have been imported at a very early period; but common and well known as it is in a state of captivity, with its peculiar habits and economy in a state of nature we are still but little and imperfectly acquainted. Like most of its kind, it is said to breed in the hollows of decayed trees; and the instinctive propensity for such situations does not appear to desert it even in a state of captivity, for Buffon mentions a pair in France, that, for five or six years successively, produced and brought up their young, and that the place they selected for this purpose was a cask partly filled with sawdust. Its eggs are stated to be generally four in number, their colour white, and in size equal to those of a pigeon. In its native state, the food of this parrot consists of the kernels of various fruits, and the seeds of other vegetables; but when domesticated or kept caged, its principal diet is generally milk and bread, varied with nuts, almonds, &c., and even pieces of dressed meat. When feeding, it often holds the food clasped in the foot, and before swallowing, masticates or reduces it to small pieces by its powerful bill and palatial cutters. This member, so unlike that of other frugivorous birds, is admirably calculated for the principal offices it has to perform, in breaking the shells of the hardest fruit and seeds, and as a strong and powerful organ of prehension and support; for few of our readers but must have observed that the bill is always first used, and chiefly depended upon, when a parrot is caged, in climbing or moving from one position to another. The longevity of the feathered race, we believe, in general far exceeds what is commonly supposed, at least, if we may judge from the age attained by various birds, even when subjected to captivity and confinement.

Thus, we have instances of eagles living for half a century; the same of ravens, geese, and other large birds, as well as among the smaller kinds usually kept caged. The gray parrot, like many others of its tribe, often lives to a great age, and we are told of individuals attaining to fifty, sixty, or even a hundred years. According to Le Vaillant, one which lived in the family of Mr. Meninck Huyser, at Amsterdam, for thirty-two years, had previously passed forty-one with that gentleman's uncle, who bequeathed it to his nephew; and there can be no doubt it must have been at least two or three years old at the time of its arrival in Europe. When Le Vaillant saw it, the bird was in a state of entire decrepitude, and in a kind of lethargic condition, its sight and memory being both gone, and it was fed at intervals with biscuits soaked in Madeira wine. In the time of its youth and vigour, it had been distinguished for its colloquial powers and distinct ennunciation, and was of so docile and obedient a disposition, as to fetch its master's slippers when required, as well as to call the servants. At the age of sixty its memory began to fail, and instead of acquiring any new phrase, it began to lose those it had before attained, and to intermix in a discordant manner the words of its former language. It moulted regularly every year till the age of sixty-five, when this process grew irregular, and the tail became yellow, after which no further change of plumage took place. The gray parrot is subject to variety, as shown in the figure of Edwards, where the ground colour is mixed with red. It measures about twelve inches in length. The bill is black, strong, and much hooked, and the orbits and space between them and the eyes covered with a naked and white skin. The whole of the plumage, with the exception of the tail, which is of a bright deep scarlet, is of an ash-gray colour, deepest upon the back, and the feathers finely relieved and margined with paler gray. The irides are of a yellowish white; the feet and toes are gray, tinged with flesh-red.

The intelligence of the parrot has often, we conceive, been greatly exaggerated. It is certainly true, that these birds exhibit the most perfect brain which is found among the feathered race. But the parrot's imitation seems purely mechanical; it articulates words indeed, but this cannot be regarded as a true language. In the same manner that an air is taught to a linnet with a bird-organ, so are words taught to a parrot, and he repeats them without knowing wherefore. He does not understand their meaning, and though he may repeat them on certain occasions, because he has learned them, he sees no reason for doing so, like man. He utters indifferently an entreaty or an insult, and those involuntary substitutions which really prove his want of intelligence, pass, with unreflecting persons, for wit, or some other mental quality, of which the bird is totally destitute, and which, in fact, it has no ability to acquire.

THE BLUE MOUNTAIN PARROT.*

Mr. Caley informs us that the blue mountain parrot, the *warrin* of the natives of New Holland, is remarkable for its docility and attachment to some people, whilst it is a perfect scold to others who may have teased or offended it. "Flocks of these birds," says this accurate observer, "may be seen in the *Eucalypti* trees when in flower, in different parts of the country, but in the greatest number near their breeding-places. It does not eat any kind of grain, even when in a domesticated state. It is much subject to fits, which generally prove fatal; and it is rare to find an individual kept alive above a couple of years. One that I kept, on being shown a picture of a coloured plant, used to put its tongue to the flowers, as if with the intent of sucking them; and I have seen it make the same attempt with a piece of cotton furniture. The flesh of this bird is very good eating."

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* Trichoglossus Hæmatodus.

THE PARRAKEETS AND LORIES.

The genus *Palæornis* of Vigors has the bill rather thick, the culmen of the upper mandible rounded, the lower broad and short. The middle feathers of the tail are greatly lengthened. The most anciently known of the parrot race belong to this genus, such as the Alexandrine parrakeet and other long-tailed species, distinguished by their elegance of form, their ruby-coloured bills, their semicircled necks, and the rich verdure of their plumage. The one just named is a native of India and Ceylon, and derives its designation from the fact, real or supposed, of its having been first transported from Asiatic countries by Alexander the Great. Its most distinguishing characters consist in the broad black patch which occupies the fore-part of the throat, and extends laterally in two narrow processes on each side of the neck; a black line stretches from the base of the beak to the eyes, and there is a deep purplish-red patch at the base of the wings. Its bill is larger than that of the rose-coloured parrakeet,* which, however, it greatly resembles in its general aspect.

The last-named species is widely spread over India, and as far eastward as Manilla. It appears, indeed, to be identical with another species extremely abundant on the African coasts, and well known in France under the title of *perruche de Senegal*. In so far as any conclusions can be drawn from the vague and brief descriptions handed down by ancient writers, it would appear that this species was, as it still continues to be, more frequent in the days of antiquity than any of its congeners. No allusion is made by these authors to those specific marks by which the Alexandrine parrakeet is so clearly distinguished, and the general description applies very closely to the rose-necked kind. That the latter was extensively known, and held in high esteem on account of the brilliancy of its plumage, the docility of its manners, and its successful imitative powers, is proved by the innumerable passages in the classical writers of antiquity, more especially from the earliest times of the Roman empire to a very late period of its annals.

The Alexandrine parrot is generally supposed to have been brought to Europe from the island of Ceylon, the ancient Taprobane. In the reign of Nero, the Romans introduced other species from different quarters of Africa. They were highly prized by that luxurious people, who lodged them in superb cages of silver, ivory, and tortoiseshell; and the price of a parrot in those days frequently exceeded that of a slave. Nor did Ovid think it beneath him to write a lengthened elegy on the death of Corinna's favourite, a bird which, in the love it bore its mistress, seems to have emulated that of the dying Greek for his country:

> "Clamavit moriens lingua, Corinna."—*Vale.*

THE BLUE-BELLIED PARRAKEET.†

In the same group is generally included that beautiful and richly-varied species from the Molucca Islands, of which the name has just been given. Its tongue, in common with that of several New Holland parrakeets, is finely ciliated at the tip on either side. Hence the formation in their favour of Mr. Vigors's genus, *Trichoglossus*. Vaillant, during his residence at the Cape, had an opportunity of studying the manners of a pair of the species just named, which had been imported from Amboyna. They bred during their confinement in the menagerie of M. Van Bletemberg, then governor of the Cape.

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* Ps. Torquatus.

† Ps. Cyanogaster.—Shaw.

The female deplumed her beautiful breast, and, after having collected the feathers into a heap, deposited two round white eggs, on which she sat most assiduously, the male feeding her at intervals, by disinterestedly disgorging what he had swallowed, and presenting the same to his spouse. The young were produced at the end of nineteen days, and in the space of a few more became covered with a gray cinereous down, which was by degrees succeeded by green feathers on the body and by blue ones on the head. At the end of three weeks they left the nest, and perched upon the neighbouring sticks, where the male and female fed them in concert, after the manner of pigeons. The parent-birds continued to tend them in this manner for six months, and often afforded a very interesting scene; the young being frequently seated beyond the female, and the male not being able to reach them, first presented the food to his mate, who immediately delivered it to her young. These, though of different sexes, were perfectly alike till the first moulting, at which time red feathers bordered with green began to appear upon the breast, and the male became distinguished by the blue patch upon the abdomen.

THE CAROLINA PARRAKEET.*

The great body of the *Psittacidæ*, as already observed, are natives of the intertropical climates; but the species now under consideration is one of the few that occurs in the temperate regions of the northern hemisphere. It is a native of the North American continent, inhabiting the United States to a latitude as high as 42°. Such, at least, was the case some twenty or twenty-five years ago, when Alexander Wilson was engaged in tracing out the history of the birds inhabiting the States; for we find, on turning to his delightful pages, that then it not only prevailed throughout Louisiana and the shores of the Mississippi and Ohio, but also those of their tributary waters as high as Lake Michigan, in latitude 42° N. We learn, however, from Audubon, not less graphic or original in his descriptive powers, that of late years these birds have rapidly diminished in number, and that they are now almost banished from districts where formerly they used to abound. "At that period," he says, speaking of twenty-five years ago, "they could be procured as far up the tributary waters of the Ohio as the great Kenhawa, the Scioto, the heads of the Miami, the mouth of the Manimee at its junction with Lake Erie, on the Illinois river, and sometimes as far north-east as Lake Ontario, and along the eastern districts as far as the boundary line between Virginia and Maryland. At the present day few are to be found higher than Cincinnati, nor is it until you reach the mouth of the Ohio that parrakeets are met with in considerable numbers. I should think that along the Mississippi there is not now half the number that existed fifteen years ago."

The Carolina parrakeets in all their movements, which are uniformly gregarious, show a peculiar predilection for the alluvial, rich, and dark forests bordering the principal rivers and larger streams, in which the towering cypress and gigantic sycamore spread their vast summits, or stretch their innumerable arms over a wide waste of moving or stagnant waters. From these, the beech, and the hack-berry, they derive an important supply of food. The flocks, moving in the manner of wild pigeons, dart in swift and airy phalanx through the green boughs of the forest; screaming in a general concert, they wheel in wide and descending circles round the tall button-wood, and all alight in the same instant, their green lustre, like the fairy mantle, rendering them nearly invisible beneath the shady branches, where they sit, perhaps arranging their plumage, and shuffling side by side, seem to caress and scratch each others' heads with all the fondness and unvarying friendship of affectionate doves. If the gun thin their ranks, they hover over the screaming wounded or dying; and returning and flying around the place where they miss their companions, seem in their sympathy to lose all idea of impending danger.

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* Arara Carolinensis.

More fortunate in their excursions, they next proceed to gratify the calls of hunger, and descend to the banks of the river or the neighbouring fields in quest of the inviting kernels of the cockle-burr, and probably of the bitter seed, which they extract from their husks with great dexterity. In the depth of winter, when other resources begin to fail, they, in common with the yellow-bird and some other finches, assemble among the tall sycamores, and, hanging from the extreme twigs in the most airy and graceful postures, scatter around them a cloud of down from the pendant balls, in quest of the seeds which now afford them an ample repast. With that peculiar caprice, or perhaps appetite, which characterises them, they are also observed to frequent the saline springs or *licks*, to gratify their uncommon taste for salt. Out of mere wantonness, they often frequent the orchards, and appear delighted with the fruitless frolic of plucking apples from the trees, and strewing them on the ground untasted. So common is this practice among them in Arkansas territory, that no apples are ever suffered to ripen. They are also fond of some sorts of berries, and particularly of mulberries, which they eat piecemeal in their usual manner, as they hold them by the foot. According to Audubon, they likewise attack the outstanding stacks of grain in flocks, committing great waste; and on these occasions, as well as on the former, they are so bold or incautious as readily to become the prey of the sportsman in great numbers. Peculiarity of food appears wholly to influence the visits and residence of this bird, and in plain, champaign, or mountainous countries, they are wholly strangers, though common along the banks of all the intermediate watercourses and lagoons.

Of their manners at the interesting period of their increase, we are not yet satisfactorily informed. But our naturalists are constantly placing their eagerly-sought and carefully-treasured information at our disposal, and we hail with pleasure and gratitude their communications. It is manifest, however, that these birds nestle in hollow trees, and take little, if any, pains to provide more than a simple hollow in which to lay their eggs, like the woodpeckers. They are at all times particularly attached to the large sycamores, in the hollow trunks of which they roost in close community, and enter at the same aperture, into which they climb. They are said to cling close to the sides of the tree, holding fast by the claws and bill; and into these hollows they often retire during the day, either in very warm or inclement weather, to sleep or pass away the time in indolent and social security, like the *Rupicolas* of the Peruvian caves, and at length are only hastily aroused to forage at the calls of hunger. Indeed, from the swiftness and celerity of their aerial movements, darting through the gleaming sunshine, decked in green and gold, it is obvious that their actions, as well as their manners, are not calculated for any long endurance; and shy, and retiring from all society but that to which they are inseparably wedded, they rove abroad with incessant activity, until their wants are gratified, when, hid from sight, they again relapse into that indolence which seems a relief to their exertions.

Audubon, in his account of the Carolina parrakeets, says: "Their flight is rapid, straight, and continued through the forests, or over fields and rivers, and is accompanied by inclinations of the body, which enable the observer to see alternately their upper and under parts. They deviate from a direct course only when impediments occur, such as trunks of trees or houses, in which case they glance aside in a very graceful manner, as much as may be necessary. A general cry is kept up by the party, and it is seldom that one of these birds is on the wing for ever so short a space, without uttering its cry. On reaching a spot which affords a supply of food, instead of alighting at once, as many birds do, the parrakeets take a good survey of the neighbourhood, passing over it in circles of great extent, first above the trees, and then gradually lowering, until they almost touch the ground, when suddenly re-ascending, they all settle on the tree that bears the fruit of which they are in quest, or on one close to the field in which they expect to regale themselves."

A rapidly increasing population, attended by an extended cultivation, and the consequent destruction of many of those ancient and decayed trees which constituted the dormitories and breeding sites of the species, as well as the war constantly waged against them by the husbandmen, as the depredators of the orchard and corn-stacks, are probably the chief causes of their rapid diminution in those parts which they formerly enlivened with their gay and varied plumage. We learn from both authors, that when engaged in feeding, they are easily approached, and numbers killed by one discharge; as the whole flock alight and feed close to each other. The work of destruction, moreover, is not confined to a single shot; for we are told, that "the survivors rise, shriek, fly round for a few minutes, and again alight on the very place of most imminent danger. The gun is kept at work; eight, ten, or even twenty are killed at every discharge; the living birds, as if conscious of the death of their companions, sweep over their bodies, screaming loud as ever, but still returning to the attack to be shot at, until so few remain alive, that the farmer does not consider it worth his while to spend more of his ammunition." Injurious, however, as they no doubt frequently are to the cultivator, their principal food is said to be the *Cockle-burr,* the seed of the *Zanthium strumarium,* a plant that abounds throughout the rich alluvial lands of the States west of the Alleghany mountains; it is a weed noxious to the husbandman on many accounts, and the consumption of its seed by the parrots must therefore be of some advantage, though that is, unfortunately for them, greatly diminished from the circumstance of its possessing a perennial root.

Like the rest of the group to which it belongs, the Carolina arara appears incapable of learning to articulate words, though, when captured, it soon becomes tame, and will eat almost immediately afterwards. Wilson gives a long and interesting account of an individual that he had slightly wounded in the wing during one of his excursions, and which he carried for a great distance in his pocket. It soon became familiarised to confinement, learnt to know its name, to come when called on, to sit on his shoulder, to climb up his clothes, eat from his mouth, &c. On account of its inability to articulate, and its loud disagreeable screams, the arara is seldom kept caged in America; and, as Audubon observes, the woods are best fitted for them, and there the richness of their plumage, their beautiful mode of flight, and even their screams, afford welcome intimation that the darkest forests and most sequestered swamps are not destitute of charms. According to this author, their nest, or rather the place where they deposit their eggs, is the bottom of the cavities of decayed trees. "Many females," he observes, "deposit their eggs together," and the number laid by each individual, he believes, is two—a number which seems to prevail throughout the great body of the family. The eggs are round, and of a light greenish white, and the young, when excluded, and before they acquire their feathers, are covered with a soft down.

The plumage of the first few months is green, but towards autumn they acquire a frontlet of carmine. Upon the ground they are slow and awkward, walking as if incommoded by their tail. When wounded, and attempted to be laid hold of, they turn to bite with open bill, and, if successful, inflict a very severe wound. They are said to delight in sand or gravelly banks, where they may frequently be seen rolling and fluttering about in the dust, at times picking up and swallowing a limited quantity. The lochs and saline springs are also constantly frequented by them, salt appearing equally agreeable to them as to pigeons, and various other birds and animals. The bill of the Carolina arara is very hard and strong, the tip much thicker and rounder than in the Psittacara group; the tooth, or angular process of the upper mandible, is well and strongly defined; the colour white. The irides are hazel, the orbital skin whitish. The legs and feet are of a pale flesh-red; the claws dusky. The forehead, cheeks, and some other parts, are of a vivid orange-red, the rest of the head and neck gamboge-yellow; the shoulder and ridge of the wings yellow, varied with spots of orange-red. The upper plumage is of a fine emerald-green, with purple and blue reflexions. The greater wing-coverts are deeply margined with greenish-yellow. The under plumage is a fine pale siskin, or yellowish-green. The greater quills have their outer webs bluish-green, passing into bright yellow at the base. The inner webs are hair brown, slightly tinged with green near their tips. The tail is green, the inner webs of the lateral feathers tinged with brownish red. The feathers of the tibiæ are yellow, passing into orange at the joint. In length this bird averages about fourteen inches; in extent of wings, twenty-two inches.

Wilson says, "While parrots and parrakeets from foreign countries abound in almost every street of our large cities, and become such great favourites, no attention seems to have been paid to our own, which, in elegance of figure and beauty of plumage, are certainly superior to many of them."

THE CRIMSON-FRONTED PARRAKEET.*

Mr. Caley states that this bird may be observed in large flocks sucking the *Eucalypti* flowers. He adds, that like the blue mountain parrot, it is subject to fits, which generally prove fatal, but it is seldom kept alive, and that its breath, or some part about its head, emits a very sweet odour. The natives told him that this species breeds in the hollow boughs of trees, scraping out the decayed mould, and making its nest of it. The eggs, he informs us, are green, without spots, and the number of young two.

THE SMALL PARRAKEET.†

Mr. Caley observes that this bird is seen in very large flocks in the *Eucalypti* trees when in blossom. "The natives," says he, "now and then bring in the young ones, but they seldom live long. I had three young ones for some time, which used to huddle together and give out a very pleasing note. They all died, strongly convulsed, and nearly at the same time; the limbs were as stiff the moment life was extinct as if the body had become cold. The natives tell me that it builds in the hollow limbs of trees, making no other nest than that of the decayed wood. It has four young ones. The eggs are white, and without spot."

THE PAPUAN LORY.‡

Another sub-family of the *Psittacidæ* is that of the *Loriana*, so named from the beautiful scarlet-coloured Lories, natives of continental India and its islands, and which appear to constitute one of its typical forms. A difference of structure is apparent in the shape of the bill and the tongue, the former member being weaker and slenderer in its proportions than in the other parrots, especially as regards the under mandible, which is lengthened and less convex in its contour, with the tip contracted and narrow, and the cutting edges straight, and without emargination. The tongue, also, is not so thick or fleshy, and the tip, instead of being smooth and soft, is rough, and in some instances furnished with a pencil of setaceous bristles. This structure is bestowed upon them for the purpose of extracting the nectar of flowers, and sucking the juices of tender fruits, which it appears constitute the principal support of the members of this beautiful division.

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* Trichoglossus Concinnus.

† Trichoglossus Pusillus.

‡ Charmosyna Papuensis.

To great elegance of form, this species unites a plumage of the richest description, the ground colour of the body being of a deep but brilliant scarlet, relieved in parts with deep azure blue, yellow, and green. The tail, or at least the two narrow central feathers, greatly exceeds the rest of the body in length, as they measure upwards of eleven inches, while the former does not exceed six; the lateral feathers are regularly graduated, as in the other lories, the longest measuring about four inches, or one-third the length of the two intermediate plumes. The bill is of an orange-red colour; the upper mandible is long, with the tip or hooked part projecting far beyond the under one, which is conic and narrow. The tongue is similar in structure and appearance to that of the other members of the group, the tip being furnished with delicate papillæ. Upon the vertex and nape are two irregular bars of azure, margined with purplish black. The lower parts of the tibiæ, lower back, and rump, are also of a deep azure. Upon the sides of the breast and thighs are patches of rich yellow. The wings are green; the interior webs of the quills blackish. The elongated tail feathers are pale grass-green, passing towards the tips into yellow; the lateral have their basal half dark green, the remainder deep saffron-yellow. This lovely specimen is an inhabitant of Papua, and other parts of New Guinea, and, as might be expected in countries rarely visited by the naturalist, little is known of its history or peculiar habits. Its remains, like those of the birds of paradise, frequently reach us in a mutilated state, being deprived of the legs, and often wanting the long feathers of the tail; and from such specimens have been derived the imperfect descriptions of various authors.

THE PURPLE-CAPPED LORY.*

This beautiful bird is a native of the Moluccas and other Eastern islands, from whence it is occasionally received, it being held in high estimation, not only on account of its elegant plumage, but for the docility it evinces, and its distinct utterance of words and sentences. It is also fond of being caressed, and lively and active in its disposition. In size it is among the largest of the group, measuring upwards of eleven inches in length. The ground colour of the plumage is rich scarlet, this tint occupying all the lower parts of the body, with the exception of a collar of yellow upon the upper part of the breast. The neck, back, upper tail-coverts, and basal part of the tail, are also of the same colour. The crown of the head is blackish purple in front, passing into violet-purple on the hinder part. The wings on the upper surface are green, the flexure and margins violet-blue, as are also the under wing-coverts. The feathers of the thighs are azure-coloured exteriorly, their basal parts being greenish. The bill is orange-yellow.

THE AUSTRALIAN LORY.

We now enter upon an Australian group, which, in that division of the globe, takes the place of the Indian lories. The members belonging to it, instead of having the ground or prevailing colour of the plumage of a red or vermilion tint, have it green, of brighter or deeper shades, according to the species, variegated, however, in many of them, with masses of the first-named colour. In this genus the tail is more elongated than in the true lories, and regularly graduated, with the tips of the feathers narrow; the wings are also narrow and pointed. It constitutes Vigor's genus *Trichoglossus*, and is thus characterised :—bill subelongate, compressed, weak, the inferior mandible slightly convex, longer than high, narrowed towards the tip, with the margins thin and entire; inner surface of the projecting tip of the upper mandible smooth, or but slightly striated, tongue furnished near the tip with a pencil of bristly papillæ; wings of moderate length, narrow, the first quill longest, the second and third a trifle shorter, the webs entire; feet, the tarsi short, feathered below the joint; toes strong, with the soles broad and extended; the claws greatly falcated, strong, and sharp; tail graduated, with the feathers narrowing towards the point. The members of this genus are birds of elegant form, and some exhibit a great variety and elegance of plumage; they are strictly arboreal and scansorial, as indicated by the form and strength of their feet and claws. In the quality of their food and the structure of their tongue, they show their typical station in the Tenuirostral tribe, their principal nutriment being derived from the nectar of flowers; they also eat or suck the juices of the soft or exterior portion of various fruits, but do not attempt the kernels or actual seeds, which constitute the general and favourite pabulum of the rest of the Psittacidæ. In their contour, and the indications of a nuchal collar which several of the species possess, we also trace a resemblance to the parrakeets, or genus *Palæornis*, Vigors; and this analogy we might expect to find, if, as we suppose, the parrakeets in their own circle constitute the Tenuirostral type. In the present genus, we are also induced to retain the orange-winged parrot of authors (*Psittacus pyrrhopterus*), for which bird Mr. Vigors instituted the genus *Brotogeris*, as we cannot observe any character of sufficient importance to warrant a generic separation, the only difference seeming to be a slight elongation of the tip of the upper mandible; but this is rendered less abrupt by the intervention of another species, the *Trichoglossus palmarum*, in which it is of a size intermediate between that of *Trich. chlorolepidotus*, *T. Swainsonii*, &c., and that of *Trich. pyrrhopterus*.

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* Lorius Domicellus.

SWAINSON'S LORIKEET.*

The present bird, so far as it is yet known, is almost exclusively an inhabitant of the south-eastern portion of the Australian continent, lying between South Australia and Moreton Bay; "at least," says Mr. Gould, "I have never heard of its existence in any part westward of the former, or northward of the latter. It also occurs in Van Diemen's Land, but its visits to that island do not appear to be either regular or frequent.

"The flowers of the various species of *Eucalypti* furnish this bird with an abundant supply of food, and so exclusively is it confined to the forests composed of those trees, that I do not recollect to have met with it in any other. It also evinces a preference for those that are covered with newly-expanded blossoms, which afford them the greatest supply of nectarine juice and pollen, upon which they principally subsist. However graphically it might be described, I scarcely believe it possible to convey an idea of a forest of flowering gums tenanted by several species of the *Trichoglossi Meliphagi*, &c.; three or four species being frequently seen on the same tree, and often simultaneously attacking the same branch. The incessant din produced by their thousand voices, and the screaming notes they emit, when a flock of either species simultaneously leave the trees for some other part of the forest, baffles all description, and must be seen and heard to be fully comprehended. So intent are the *Trichoglossi*, for some time after sunrise, upon extracting their honey-food, that they are not easily alarmed, or made to quit the trees on which they are feeding. The report of a gun discharged immediately beneath them has no other effect than to elicit an extra scream, or cause them to move to a neighbouring branch, where they again recommence, with all the avidity possible, creeping among the leaves, and clinging to the branches in every variety of position. During one of my morning rambles in the brushes of the hunter, I came suddenly upon an immense *Eucalyptus*, which was, at least, two hundred feet high. The blossoms of this noble tree had attracted hundreds of birds, both parrots and honey-suckers; and from a single branch I killed the four species inhabiting the district, viz., *T. Swainsonii*, *chlorolepidotus*, *concinnus*, and *pusillus*. I mention this fact in proof of the perfect harmony existing between these species while feeding; a night's rest, however, and the taming effect of hunger, doubtless contributed much to this harmonious feeding, as I observed that at other periods of the day they were not so friendly."

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* Trichoglossus Swainsonii.

THE ORANGE-WINGED LORIKEET.*

This bird is a native of the Sandwich Islands, and two specimens of it were brought to England in the same vessel which conveyed hither the late unfortunate king and queen of those islands. "In their manners," says Mr. Vigors, "they are peculiarly interesting. Strongly attached to each other, like the individuals of the same species, so well known in our collections, and which we familiarly style *Love birds*, they assert an equal claim to that title, if it is to be considered the renowned or the distinctive sign of affection. They will not admit of being separated even for a moment; and, whether in their cage or at liberty, every act and every movement of one has a reference to the acts and movements of the other. They are lively, active, and familiar, distinguishing and following those who attend them, with perfect confidence, but *always acting in concert*. Their movements are less constrained than those of parrots in general, approaching, both on the ground and the wing, to the quick pace and short and rapid flight of the more typical perchers. They have, apparently, less power of voice than the greater part of the family, uttering only a sort of chirrup, like that of the sparrow; this is shrill, it must be confessed, at times, when rivalship or any particular incitement induces them to exert it to the utmost; but at other times it is far from unpleasing, more especially when they employ it, as is their custom, either in welcoming the approach of the morning, or acknowledging the attentions of a favourite."

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* Trichoglossus Pyrrhopterus

THE MACCAWS.

THE GREAT SCARLET MACCAW.[*]

The gorgeous Maccaws form the genus *Macrocercus* of Vieillot. The face is either naked, or merely striped with feathery lines. The tail is very long, wedge-shaped, and sharp-pointed. These birds, the largest and most magnificent of the parrot tribe, inhabit South America. The great scarlet maccaw, when in perfect plumage, sometimes measures about three feet in length, the tail, of course, included. The prevailing plumage is scarlet, as its name implies, the wings blue, the wing-coverts varied with yellow, the cheeks white and wrinkled. It is certainly a very sumptuous creature, but after all, rather too like a richly-liveried footman—an association somewhat strengthened by its being so often seen as an inhabitant of lordly mansions, and surrounded by other menial bipeds, almost as gorgeous as itself. Our feelings would no doubt have been different had we ever witnessed their natural evolutions. "It is a grand sight in ornithology," says Waterton, "to see thousands of aras flying over your heads, low enough to let you have a full view of their flowing mantle." How delightful would it have been, on some bright and dewy morning, to have accompanied Lord Anson to view a magnificent rapid in the island of Quibo. A fine river of transparent water there precipitates itself along a rocky channel, forming numerous falls, and the great disrupted rocks which form its boundary on either side are crowned with lofty forest trees. "While the commodore and those who were with him were attentively viewing the place, and were remarking the different blending of the waters, the rocks, and the woods, there came in sight, as it were still more to heighten and animate the prospect, a prodigious flight of maccaws, which, hovering over this spot, and often whirling and playing on the wing about it, afforded a most brilliant appearance by the glittering of the sun upon their varied plumage; so that some of the spectators could not refrain from a kind of transport when they recounted the complicated beauties which occurred at this extraordinary waterfall." The blue and yellow species[†] is little inferior to the preceding, either in size or sumptuousness. It is less common, and seems to have been first described by Aldrovandus, from a specimen which he saw in the palace of the Duke of Mantua. It is said to be also less easily reclaimed as a domestic bird; yet, says a naturalist, "we have not seldom enjoyed the society of a very fine example which makes its way familiarly (such is its custom in the afternoon) amid the varied horticultural produce which graces the *dessert* of Mr. Neill." Many other splendid species are described and figured in the works of naturalists.

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[*] Psittacus Aracanga.—Lath.

[†] P. Araruna.—Linn.

THE BLUE AND YELLOW MACCAW.*

This beautiful species is rather inferior in size to the great scarlet maccaw. In length, it measures about thirty-nine inches, the tail alone being about twenty-four. The bill is entirely black, very large and strong; the upper mandible measuring, from the forehead to the tip, three inches and a quarter: it is greatly deflected, and bends immediately from the base; the upper mandible is short and massive, rapidly ascending, and describing when closed a right angle with the upper. The cheeks are white, and nearly naked, with three fine narrow striæ of small black plumes beneath the eyes. The irides are yellowish white. Immediately beneath the under mandible is a broad black band, extending upwards to the ears, and encompassing the greater part of the naked white space. The whole of the upper plumage is of a beautiful rich blue, passing into green upon the forehead, crown, rump, and some of the smaller wing-coverts. The greater quills and tail are of a deeper tint, approaching to violet. The under surfaces of the wings and tail are yellow. The sides of the neck, breast, and inferior parts of the body, are rich saffron yellow. The legs and feet are blackish-gray, the scales defined by whitish lines.

Like all the other members of the genus, it is a native of tropical America, and is met with in the Brazils, particularly upon the banks of the river Amazon, in Guiana, and Surinam. It prefers the woods, particularly such as occupy swampy grounds, and which abound in a species of palm, upon whose fruit it principally subsists. It is said generally to keep in pairs, though occasionally to assemble in large flocks, and when this is the case, their united screams are heard to a great distance. The dimensions and form of their wings, and long cuneiform tail indicate a powerful and vigorous flight, and, accordingly, we are informed that in this respect they are inferior to none of the tribe; they fly often at a high elevation, and accompanied by a variety of aerial evolutions, particularly before alighting, which is always upon the summits of the highest trees. They deposit their eggs, which never exceed two in number, in the hollow trunks of decayed trees, and generally have two broods in the year. Both sexes are reported to sit alternately upon the eggs, and to be equally assiduous in cherishing and conveying food to the young. When taken at an early age, they are easily tamed, but their imitative powers are not equal to those of the gray parrot, and it is seldom that they can be taught to articulate clearly, or more than a few words. Their natural notes are very unpleasant to the ear, consisting of loud and piercing screams, interrupted with hoarse croaking murmurs. Living specimens of this species are sometimes seen caged in England. A very fine one was recently completely domesticated at Dr. Neill's, Canonmills, near Edinburgh, and allowed the freedom of several apartments: when desirous of being noticed, it called out "Robert," the name of its earliest master, very distinctly; but it did not acquire more than one other conventional sound.

THE BRAZILIAN GREEN MACCAW.†

This Maccaw, a native of Jamaica, Guiana, and the Brazils, is as beautiful as it is rare. It soon becomes familiar with persons whom it sees frequently, and is pleased in receiving and repaying their caresses. But it has an aversion to strangers, and particularly to children, flying at, and sometimes attacking them with great fury.

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* Macrocercus Ararauna.

† Psittacus Severus.—Linn.

It is exceedingly jealous; becoming even enraged at seeing a young child sharing its mistress's favours. But as its flight is short and laborious, it can only exhibit its displeasure by gestures and restless movements. On the return of attention, the maccaw is overjoyed, murmurs satisfaction, and sometimes makes a noise exactly like the laugh of an aged person.

THE PHILLIP ISLAND PARROT.*

The Australian genus, *Nestor*, is pointed out as forming a connecting link between the parrots and the cockatoos. "I have considerable pleasure," says Mr. Gould, in his splendid work on "The Birds of Australia," "in being enabled to add a second and so beautiful a species as the present to the genus *Nestor* of Wagler. Like its near ally, the *N. hypopolius*, which, so far as is yet known, is only found in New Zealand, the *N. productus* has a very limited habitat, the entire race, as I am credibly informed, being confined to Phillip Island, whose whole circumference is not more than five miles in extent; so strictly, in fact, is it confined to this isolated spot, that many persons who have resided in Norfolk Island for years, have assured me its occurrence there is never known, although the distance from one island to the other is not more than three or four miles. I regret to state, that, in consequence of the settlement of Norfolk Island, the native haunts of this fine bird have been so intruded upon, and such a war of extermination has been carried on against it, that if such be not the case already, the time is not far distant when the species will be completely extirpated, and, like the Dodo, its skin and bones become the only mementos of its existence.

"Had I been able to visit Norfolk and Phillip islands, I should, certainly, have made inquiry into the native habits and cunning of this very singular form among the parrots, the nature of its food, mode of procuring it, &c.; and I would now urge the necessity of these investigations upon those who may be favourably situated for making them. Like all the other members of the extensive family of the *Psittacidæ*, it bears captivity remarkably well, readily becoming contented, cheerful, and an amusing companion. During my stay at Sydney, I had an opportunity of seeing a living example in the possession of Major Anderson, and was much interested in many of its actions, which were so different from those of every other member of its family, that I felt convinced they were equally different and curious in a state of nature. This bird was not confined to a cage, but permitted to range over the house, along the floors of which it passed, not with the awkward waddling gait of a parrot, but in a succession of leaps, precisely after the manner of the *Corvidæ*.

"Mrs. Anderson, to whom I am indebted for the little I could learn respecting it, informed me that it is found among the rocks and upon the loftiest trees of the island; that it is so tame as to be readily taken alive with a noose, and that it feeds on the blossoms of the whitewood tree, or *hibiscus*, sucking the honey of the flowers. The mention of this latter circumstance induced me to examine the tongue of the bird, which presented a very peculiar structure, not, like that of the true honey-feeding parrakeets, furnished with a brush-like termination, but with a narrow, horny scoop on the under side, which, together with the extremity of the tongue, resembled the end of a finger, with the nail beneath it instead of above. This peculiarity in the structure of the organ is doubtless indicative of a corresponding peculiarity in the nature of the food on which the bird subsists. I may mention that Sir J. P. Millbank, Bart. informed me that a living example of this species in his possession evinced a strong partiality to the leaves of the common lettuce and other soft vegetables, and that it was also very fond of the juice of fruits, of cream, and of butter.

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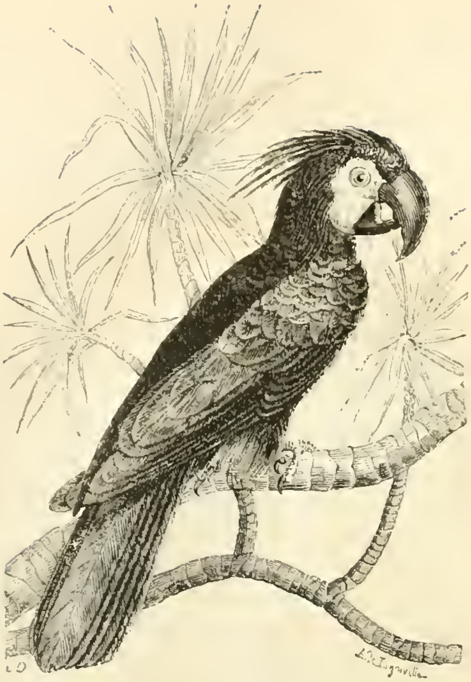
* Nestor Productus.—Gould.

"Mr. Anderson told me that it lays four eggs in the hollow part of a tree, but beyond this, I was unable to ascertain anything respecting its nidification. Its voice is a hoarse, quacking, inharmonious noise, sometimes resembling the barking of a dog. It would appear, from the numerous specimens I have examined, that the sexes scarcely differ from each other in colour; the young, on the contrary, have but little of the rich yellow and red markings of the breast, that part being olive-brown like the back.

"The general colour of the upper surface brown; head and back of the neck tinged with gray, the feathers of these parts, as well as of the back, margined with a deeper tint; rump, belly, and under tail-coverts deep red; cheeks, throat, and chest yellow, the former tinged with red; shoulders on their under surface yellow tinged with rufous olive; tail-feathers banded at the base with orange-yellow and brown; the inner webs of the quill-feathers at the base and beneath, with dusky red and brown; irides very dark brown; bill brown; nostrils, bare skin round the eye, and feet dark olive-brown."

In Yates's "New Zealand," we are informed that the *Nestor hypopolius*, known there by the name of *kaka*, is much larger than any other parrot in that island; but possessing all their mischievous qualities, and capable of learning to imitate the human voice to an astounding degree. Its feathers are of a dark russet colour; round the neck, upon the thighs, and under the tail, beautifully tinged and spotted with deep red. It has a large round dark eye, and the feathers encircling it are shaded with a mixture of yellow and red.

This bird feeds on all kinds of fruits, berries, and farinaceous roots. It bites holes in trees, in which it makes its nest; laying four, and sometimes five eggs, perfectly white. Generally three of these birds are found together in the same hole, one male and two females; and during the season of incubation, the nests, though separated, are so close together, that either of the mother-birds can sit upon the eggs, feed their neighbour's young, and cover them with one of her wings, without leaving her own nest, or neglecting her own offspring. The cry of these birds, when ranging at large in the woods, is harsh and disagreeable in the extreme.



THE INDIAN PARROT.*

The birds distinguished by Vaillant as the parrots with a trunk, have characters sufficiently peculiar by which they may be detached from others.

Their short and square tail, and crest composed of long and narrow feathers, assimilate them to the cockatoos. They have the cheeks naked like the aras; but their bill with an enormous upper mandible, and the lower very short, which cannot, therefore, be entirely closed; their cylindrical tongue, terminated by a little concave gland cleft at the end, and capable of being protruded out of the mouth; their legs naked a little above the talons; their tarsi short and flat, on which they frequently support themselves in walking, distinguish them from all other parrots.

SWINDERN'S PARROT.

This beautiful little species is a native of Southern Africa, and was first described and figured by Kuhl, in his "Conspectus Psittacorum," under the title of *Psittacus Swinderianus;* it was included in that section named by him Psittacula, in which he placed the whole of the smaller species with short and even or slightly rounded tails—an artificial division, and established without due regard to the structure, habits, or distribution of the species. Little is known respecting its natural history, being a bird of rare occurrence, and even now only seen in a few collections. In the form and strength of its bill, it shows an affinity to the larger parrots, which is still more strongly indicated in another species, the *Psittacus Mallaccensis* of Latham. In size it is among the smallest of its race, its extreme length being about six inches. The bill is black and strong, with the upper mandible emarginate. The head and nape are of a beautiful lively green, bounded by a black nuchal collar; the neck and breast are yellowish green; the lower back and upper tail coverts are deep azure blue. The tail, which is short, and nearly even, has the two intermediate feathers wholly green; the rest on each side have their basal half vermilion-red, bounded by a bar of black, the tips being green. The legs and toes are grayish-black. The wings are long, and when closed reach to the end of the tail.

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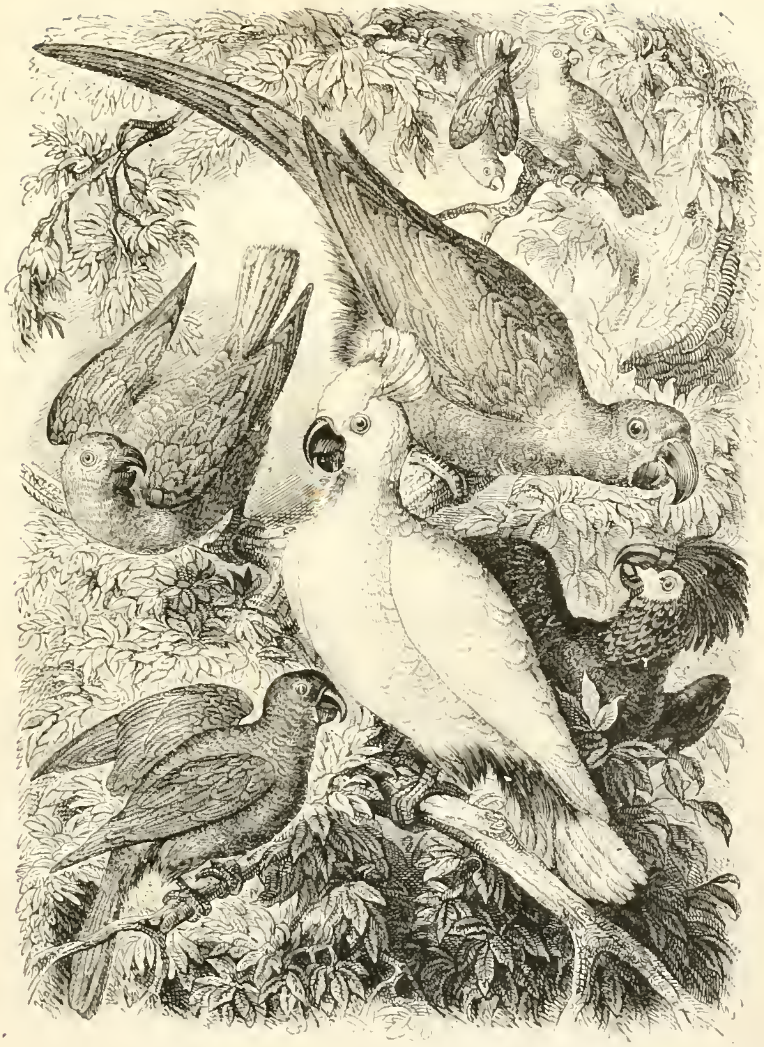
* Microglosum Atercimum.—Lesson.

THE COCKATOOS.*



THE ROSE-CRESTED

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disproportionate shortness and thickness of the lower, the cockatoos vie with the more gorgeous macaws, which they also emulate in size, habits, and behaviour. The naked space in their cheeks is, however, reduced to a small circle surrounding each of the eyes; and their tail is short, and perfectly square at the extremity.

Their most remarkable character consists in a tuft of elongated feathers, rising from the back of the head, and capable of being raised or depressed at pleasure. By this crest they are at once distinguished from all the other groups of the parrot family, with the exception of a New Holland genus, differing from the other cockatoos in the greater elevation and comparative shortness of its bill, the increased dilitation of its lower mandible, and several other characters of inferior moment. In the latter group, the ground colour of nearly all the species is black; while in the common cockatoos, it is almost uniformly white.

The species of this genus naturally arrange themselves into two subdivisions; in the one of which the crest assumes a rounded form, and falls backward over the neck; while in the other it is lengthened into a point, folded together, and curved upwards. The Rose-crested species belongs to the first subdivision. Its length is sixteen or eighteen inches; and its plumage white, with an occasional tinge of rose. The crest is formed of feathers for the most part of a bright orange-red beneath, and the inferior wing and tail-coverts have a shade of yellow. The bill is bluish-black, and the legs are of a leaden gray.

The rose-crested cockatoo is a native of Sumatra and the Moluccas. It is said to be less intelligent than the rest of the group, and is particularly fond of making a noise and assuming a variety of antic postures.

THE GREATER SULPHUR-CRESTED COCKATOO.*

We give this bird as an example of the second division of the genus *Plyctolophus*, or that in which the feathers are folded on themselves, curved upwards, and elongated into a sharp point. The ground of its plumage is purely white, with a tinge of light yellow on the crest, the inner barbs of the wing and lateral tail-feathers, and the inferior tail-coverts. The iris is dusky-brown, and the bill and legs grayish-black. In size, the bird is somewhat less than the species last described, but the longer feathers of the crest measure as much as seven inches in length. Mr. Caley says:—"I have met with this bird in large flocks at the conflux of the Grose and Haukesberg rivers, and in the long meadow near the Nepean river in New Holland. They are shy, and not easily approached. I have heard from the natives that this bird makes its nest, in the rotten limbs of trees, of nothing more than the vegetable mould formed by the decayed parts of the bough; that it has no more that two young ones at a time; and that the eggs are white without spots."

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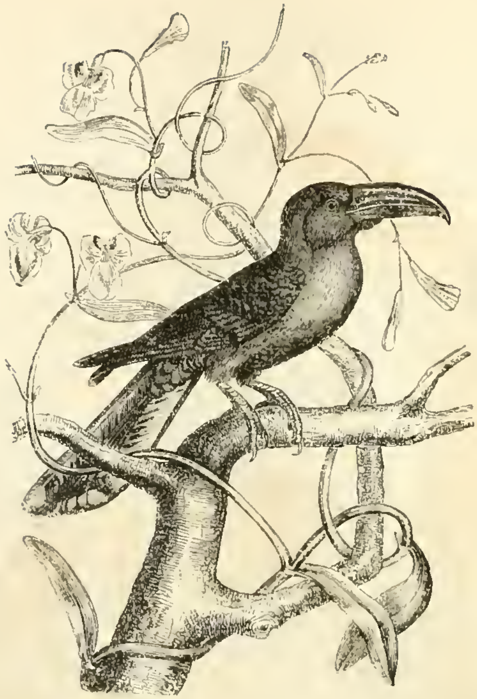
tail.

* Microglosum Atercimum.—Lesson. istata.—Vieill.

The general plumage of the body is white, slightly tinted upon the breast, sides, and inner wing-coverts with pale sulphur-yellow. The crest, in form like that of the other species, and auricular spot, are fine sulphur-yellow. The legs and toes are gray, the irides red. It is a native of the Moluccas, and other Indian islands; but of its natural habits we have again to report deficiency of information. In captivity the female sometimes produces eggs; "and," says Mr. Selby, "we have now specimens by us, which were laid by one at rather peculiar periods, viz., the 21st of June, 21st of September, and 21st of December; but whether this resulted from the peculiar economy of the bird, as acted upon by the seasons, or was the effect of the confinement, we are unable to determine."

We now pass from the Family of the Parrots, with a fuller account of which we thought our readers would be gratified, from their acquaintance with several members of it, than is either practicable or desirable in other instances.



THE SCYTHROPS.*

In the study of the "Feathered Tribes," we cannot fail to be struck by remarkable differences. Thus we pass, as in the present instance, from the immense and extremely varied family of the *Psitticidæ* to a bird which, in many respects, presents a remarkable contrast. What a difference is there, for example, between the beaks of the parrots, and the huge bill of the bird which the engraving now presents to the eye. In general form, as well as in the tints of its plumage, it is widely dissimilar; and while they exhibit the wondrous diversity that prevails among parrots, parrakeets, lories, maccaws, and cockatoos, of the *Scythrops* only one species is known, which is proper to New Holland. This bird is as large as a crow, whitish, with a gray mantle. It has a large and thick bill, with two slight ridges longitudinally on each side. The bill approximates these birds to the toucans, but the tongue is not ciliated. Round the eyes is naked, and the nostrils are round. The general colour is pale green; the back, wing, and tail are of a leaden hue. This bird feeds on certain grains and scarabæi. It often extends its tail like a fan, and utters a piercing and almost terrific cry, something like that of the cock when he perceives a bird of prey. These birds are only seen in the morning and the evening, sometimes seven or eight in number, but more usually in pairs. They are of a wild and fierce character, and cannot be tamed. They refuse all food, and peck violently at those who approach them. Their appearance and cries are said to be a sure indication of approaching wind or storm.

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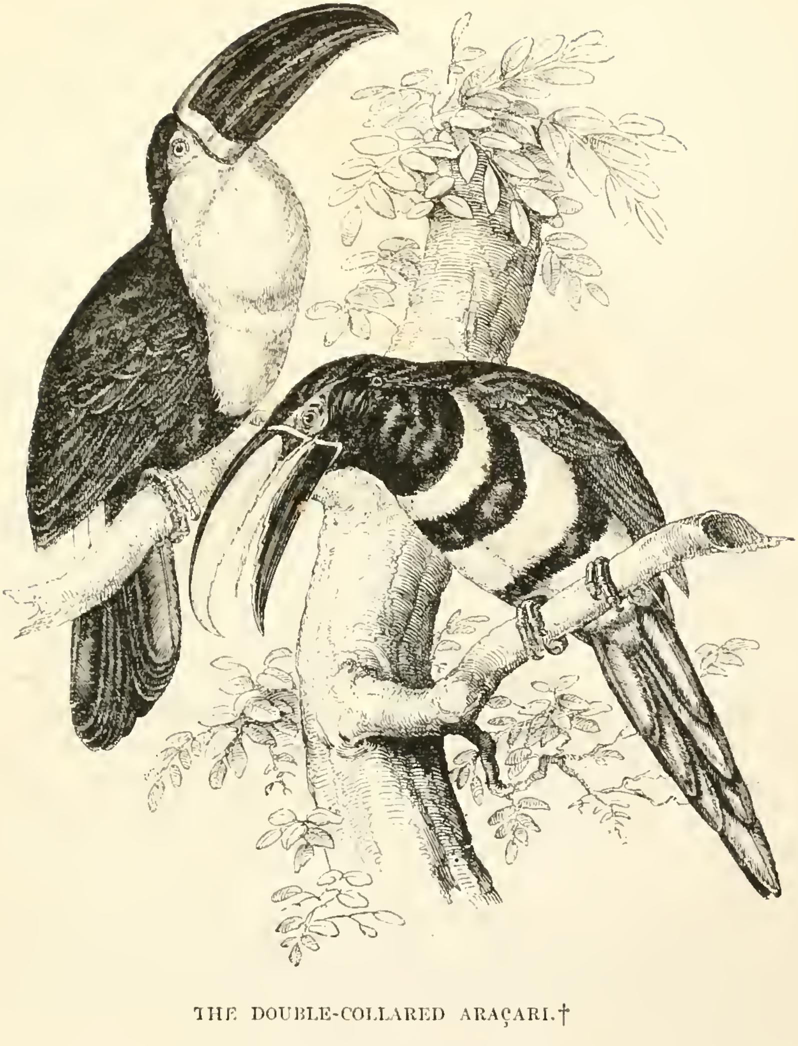
* Scythrops Novæ Hollandiæ.

THE TOUCANS.*



THE DOUBLE-COLLARED ARAÇARI.†

There are three species of Toucans in Demerara, and three diminutives, which Mr. Waterton calls "Toucanets." The largest of the first species frequents the mangrove trees on the sea coast. The other two species are very common. "They feed entirely on the fruits of the forest," the same naturalist says, "and though of the pie kind, never kill the young of other birds, or touch carrion. The larger is called Bouradi by the Indians. They seem partial to each other's company, and often resort to the same feeding tree, and retire together to the same shady noon-day retreat. They are very noisy in rainy weather, at morn and eve. The sound which the Bouradi makes is like the clear yelping of a puppy dog, and you fancy he says, 'Pia-po-o-co,' and thus the South American Spaniards call him Piapoco.

"All the toucanets feed on the same trees on which the toucan feeds, and every species of this family of enormous bill, lays its eggs in the hollow trees. They are social, but not gregarious. You may sometimes see eight or ten in company, but you will find it has only been a dinner party, which breaks up and disperses towards roosting time."

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* Ramphastidæ.

† Pteroglossus Bitorquatus.—Vigors.

"The bill of the toucan," says Mr. Jesse, "is out of all proportion to the size of the body of the bird. In fact, it appears an enormous excrescence, equally unwieldy and useless. This, however, is not the case. In endeavouring to ascertain the utility of the long beak of the toucan, we must refer to its food, the means of procuring it, the enemies it has to encounter, and the peculiar habits of the various animals of the country in which it is found. The toucan, like the woodpecker, deposits its eggs in the holes of trees. The bird itself, as well as its eggs, would become the prey of the numerous monkeys which inhabit the country if it had not so large a bill to defend itself. The toucan feeds much on the eggs of other birds. By means of its long bill, it is enabled to search for and reach them in the holes of trees, and also in the pendant nests of tropical birds. These nests are suspended from the extremity of branches of trees, as a security against monkeys, and have a hole in the side, into which the toucan is enabled to thrust its long bill. It is evident that this powerful bill is not required to break the food, since the bird seizes fruit or eggs at the extremity of it, and, by throwing back the head, deposits the food in its throat at once. We thus see, that what at first appears a deformity, is, on the contrary, a kind and useful provision of nature to enable the bird both to feed and defend itself." Other naturalists have been led to differ from Mr. Jesse, as to the food of these remarkable birds.

Mr. Swainson, who had seen them in their native forests, informed Mr. Broderip that he had frequently observed them perched on the tops of lofty trees, where they remained as if watching. This circumstance, joined to others connected with the remains of food found in the stomachs of such as were dissected, led to the suspicion that these birds were partly carnivorous, feeding on eggs and young birds, as well as fruits and berries; and that while perched upon these high trees, the toucans were, in fact, busily employed in watching the departure of the parent birds from the nest. Mr. Swainson could never catch the toucans in the fact, nor did anything appear in his dissections to determine with certainty on what they fed. Mr. Such informed Mr. Broderip that he had seen these birds in Brazil feed on the toucan-berry, that he had frequently observed them in quarrels with the monkeys, and that he was certain that the toucans fed on eggs and nestlings.

In the year 1824, a living toucan was exhibited in St. Martin's-lane, London. Mr. Vigors stated at a Zoological Club, that the bird had been fed on a vegetable diet; but that the proprietor had told him, that on the occasion of a young canary-bird having escaped and gone near the toucan, the latter instantly seized and devoured the canary bird.

Mr. Broderip determined to bring the matter to the test on a visit to this bird, which was, apparently, in the highest state of health. A goldfinch, introduced into the toucan's cage, was seized and compressed so suddenly, that the poor little songster had only time to utter a short squeak before it was dead, with its bowels protruding. The toucan then hopped with it to another perch, and began to strip off its feathers. When it was nearly naked, it broke the bones of the wings and legs, taking them in its bill, and giving them a strong lateral wrench. Having reduced the little victim to a shapeless mass, it first swallowed the viscera, and then the remaining parts, piece after piece, not even rejecting the legs and bill. Mr. Broderip adds that he has sometimes observed it return its food from its crop, and swallow it again after a second mastication. "The food on which I observed him so employed," he says, "was a piece of beef, which had evidently been macerated for some time in the crop. While masticating it, he made the same hollow clattering noise as he made over the remains of the goldfinch. Previous to this operation, he had examined his feeding-trough, in which there was nothing but bread, which I saw him take up and reject; and it appeared to me that he was thus reduced from necessity to the above mode of solacing his palate with animal food. His food consists of bread, boiled vegetables, eggs, and flesh, to which a little bird is now added about every second or third day. He shows a decided preference for animal food, picking out all morsels of that description, and not resorting to the vegetable diet till all the former was exhausted.

"It is said that the nerves are very much expanded within the internal surface of the bill in these birds; and independently of the sensual enjoyment which the toucan above mentioned appeared to derive from palating his prey, I have observed him frequently scratching his bill with his foot, which may be observed as furnishing additional evidence of the sensibility of this organ. While taking his prey, he never used his foot for the purpose of conveying it either to his bill or elsewhere. The bill was the sole vehicle, and the organ actively employed; the foot merely confined the prey on the perch."

Among the peculiarities of the bird exhibited in St. Martin's-lane, there was one that cannot be passed over in silence. When he settled himself to roost, he sat a short time with his tail retroverted, so as to make an acute angle with the line of his back; he then turned his tail over the right shoulder, nestling it on the soft plumage of the back—on which last the under mandible rested—till the bill was so entirely covered that no trace of it was visible. When disturbed, he did not drop his tail, but almost immediately returned his bill to the comfortable nidus from which, on being disturbed, he had withdrawn it. He broke some of his tail-feathers, but before that accident the toucan, when at roost, retroverted his tail so entirely that the upper surface of the tail-feathers lay over and came in contact with the plumage of the back; so that the bird had the appearance of a ball of feathers. It appears that he always roosted in the same way.

Mr. Vigors kept a toucan in a state of domestication for many years, and of it he has given many interesting particulars. It was not allowed to be indulged in that disposition to animal food which so strikingly belongs to its family. Mr. Vigors found it thrive sufficiently well on a vegetable diet, and feared that if it were ever allowed any other, it would be difficult to restrain its inclination for it within moderate limits. Eggs were the only animal food with which it was supplied. Of these it was particularly fond, and they were generally mixed up in its ordinary food, consisting of bread, rice, potatoes, German paste, and similar substances.

It delighted in fruits of all kinds. During the period when these were fresh, it fed almost exclusively on them. Even in winter it exhibited great gratification in being offered pieces of apples, oranges, or preserved fruits of any description. These it generally held, for a short time, at the extremity of its bill, touching them with apparent delight with its slender and feathered tongue, and then conveying them by a sudden jerk to its throat, where they were caught and instantly swallowed. Its natural propensity to preying upon animals, though not indulged, was still strongly conspicuous. When another bird approached its cage, or even a skin or preserved specimen were presented to it, considerable excitement was exhibited. It raised itself up, erected its feathers, and uttered the hollow clattering sound which seemed to be the usual expression of delight in these birds; at the same time, the irides of the eyes expanded, and the toucan seemed ready to dart at its prey, if the bars of its cage permitted its approach. On one occasion, when a small bird was placed by chance over its cage at night, it showed great restlessness, as if aware of the neighbourhood of the bird; and it would not be composed till the cause of its disquietude was discovered and removed.

When in its cage, the toucan was peculiarly gentle and tractable, suffered itself to be played with, and fed from the hand. Out of its cage it was wild and timid. In general it was active and lively; and, contrary to what might be expected, from the apparent disproportion of the bill, and the seemingly clumsy shape of birds of this genus, as they are usually set up or represented in figures, its appearance was not only graceful, but its movements, as it glided from perch to perch, were light and sylph-like; so much so, indeed, as to lead to this bird being called Ramphastos *Ariel.* This toucan kept itself in beautiful plumage, its lighter colours being strikingly vivid, and the deep hue of its upper body in particular being always black and glossy. For this fine condition it seemed to be much indebted to its fondness for bathing. Every day it immersed itself in cold water with apparent pleasure, even in severe weather, and in no respect did it seem to suffer by the transition from its own warm climate to an uncongenial atmosphere.

Besides the usual sounds of these birds, it uttered, at times, a hoarse and somewhat discordant cry when it happened to be hungry, and to see its food about to be presented to it. On such occasions it stood erect, raising its head in the air, and half opening its bill, as this cry was emitted. "These," says Mr. Vigors, "are the only sounds I have heard him utter; and in neither can I say that I have detected any similarity, or even approach, to the word 'toucan,' as has sometimes been asserted, and from whence the trivial name of the genus has been supposed to originate. Neither have I been able to verify another observation which has been advanced respecting these birds, that the bill is compressible between the fingers in the living bird. The bill, notwithstanding the lightness of its substance, is firm, and capable of grasping an object with much strength."

THE SAFFRON-COLOURED BILL TOUCAN.*

Mr. Vigors generally observed that this bird took what was offered rather by the sides than the point of the bill, and he suspected that much of the power of that member was centred in this lateral motion. On the cold weather commencing, it was brought into a room with a fire, and the unusual light seemed to interfere with its general habits; it did not then go to rest so early as had been its custom, and it sometimes even fed at a later hour. During the summer months, however, when more free from interruption, its habits were singularly regular. As the dusk of evening approached, the toucan finished its last meal for the day, took a few turns, as if for exercise after its food, round the perches of its cage, and then settling on the highest perch, disposed itself, almost at the moment of alighting, with its head drawn in between its shoulders, and its tail turned vertically over its back.

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* Andigena Bailloni.—Gould.

In this posture it generally remained for about two hours, in a state between sleeping and waking, its eyes for the most part closed, but opening on the slightest interruption. At such times it would allow itself to be handled, and would even take any favourite food that was offered, without altering its posture further than by a gentle turn of the head. It would also suffer its tail to be replaced by the hand in its natural downward posture, and would then immediately return it again to its vertical position. In these movements the tail seemed to turn as if on a hinge that was acted on by a spring. At the end of about two hours it began gradually to turn its bill over its right shoulder, and to nestle it among the feathers of its back, sometimes concealing it completely within the plumage, at other times leaving a slight portion of the culmen exposed. At the same time it dropped the feathers of its wings and those of the thigh-coverts, so as to encompass the legs and feet; and thus nearly assuming the appearance of an oval ball of feathers, secured itself against all exposure to cold.

Mr. Waterton was the earliest naturalist, with whom the writer is acquainted, that gave an accurate account of the appearance of the bill of the living toucan. He says, "were a specimen of each species presented to you, you would pronounce the bill of the Bouradi the most rich and beautiful; on the ridge of the upper mandible a broad stripe of most lovely yellow extends from the head to the point; a stripe of the same breadth, though somewhat deeper yellow, falls from it at right angles next the head down to the edge of the mandible; then follows a black stripe, half as broad, falling at right angles from the ridge, and running narrower along the edge to within half an inch of the point. The rest of the mandible is a deep bright red. The lower mandible has no yellow; its black and red are distributed in the same manner as on the upper one, with this difference, that there is black about an inch from the point. The stripe corresponding to the deep yellow stripe of the upper mandible is sky-blue. It is worthy of remark, that all these brilliant colours of the bill are to be found in the plumage of the body and the bare skin round the eye.

"All these colours, except the blue, are inherent in the horn; that part which appears blue is, in reality, transparent white, and receives its colour from a thin piece of blue skin inside. This superb bill fades in death, and in three or four days' time has quite lost its original colours.

"Till within these few years, no idea of the true colours of the bill could be formed from the stuffed toucans brought to Europe. About eight years ago" (we may now add to this time about twenty-eight years), "while eating a broiled toucan, the thought struck me that the colours in the bill of a preserved specimen might be kept as bright as those in life. A series of experiments proved this beyond doubt. If you take your penknife and cut away the roof of the upper mandible, you will find that the space betwixt it and the outer shell contains a large collection of veins and small osseous fibres, running in all directions through the whole extent of the bill. Clear away all these with your knife, and you will come to a substance more firm than skin, but of not so strong a texture as the horn itself; cut this away also, and behind it is discovered a thin and tender membrane, yellow where it has touched the yellow part of the horn, blue where it has touched the red part, and black towards the edge and point; when dried, this thin and tender membrane becomes nearly black; as soon as it is cut away, nothing remains but the outer horn, red and yellow, and now become transparent. The under mandible must undergo the same operation. Great care must be taken, and the knife used very cautiously, when you are cutting through the different parts close to where the bill joins the head; if you cut away too much, the bill drops off; if you press too hard, the knife comes through the horn; if you leave too great a portion of the membrane, it appears through the horn, and by becoming black when dried, makes the horn appear black also, and has a bad effect; judgment, caution, skill, and practice, will ensure success.

"You have now cleared the bill of all those bodies which are the cause of its apparent fading; for these bodies dry in death, and become quite discoloured, and appear so through the horn; and reviewing the bill in this state, you conclude that its former bright colours are lost.

"Something still remains to be done. You have rendered the bill transparent by the operation, and that transparency must be done away to make it appear perfectly natural. Pound some clean chalk, and give it enough water till it be of the consistency of tar; add a preparation of gum arabic to make it adhesive; then take a camel-hair brush, and give the insides of both mandibles a coat; apply a second when the first is dry, then another, and a fourth to finish all. The gum arabic will prevent the chalk from cracking and falling off. If you remember, there is a little space of transparent white in the lower mandible, which originally appeared blue, but which became transparent white as soon as the thin piece of blue skin was cut away; this must be painted blue inside. When all this is accomplished, the bill will please you; it will appear in its original colours."

In reference to the Double-collared Araçari, of which we give an engraving, Mr. Gould says, "The Messrs. Sturm state that the yellow crescent is only found on the breast of the females, and that the male is entirely devoid of it; but I suspect that this is not always the case, as it is very conspicuous in one of the specimens of the British Museum, which I have no doubt is that of a male." We give an engraving, also, of the Saffron-coloured Hill Toucan.

THE PLANTAIN EATERS.*

Mr. Swainson raises this group of birds to the rank of a family. Their food is entirely vegetable, and of the most tender and delicate description. Their bill is short and compressed; the tongue is short and pointed; the wings are moderate; so also is the tail; the feet are strong; the lateral toes are unequal, the inner shortest; the claws are slender and slightly curved.

The Chilian Plant-cutter is nearly the size of a quail. The colour is an obscure gray on the back, rather brighter on the belly; the points of the quills and of the tail are black. The sound of its voice is hoarse and interrupted. It feeds on plants, but previously has the destructive habit of cutting them off close to the root, and often cuts off capriciously a quantity of them, without touching them any further. For this reason the peasants persecute this species, and carry on against it a continual war; while the children who destroy the eggs of these birds are rewarded. A defence is provided in the nest being built in obscure and but little frequented places; but notwithstanding this, the numbers of this plant-destroyer are considerably diminished. "I do not know," says Molina, "whether this is because a price is set on its head, or on account of its naturally small degree of fecundity."

The Colies† should also be noticed. The plumage of the species is soft and silky, and the colour generally sombre, whence they are called, at the Cape, mouse-birds. Africa and the East Indies are the localities in which they are found: the *Colius viridis* of

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* Musophagidæ.

† Coliinæ.

Latham, said to be from New Holland, belongs probably to another genus. The Colies are gregarious, live upon fruits, and are the scourges of gardens. They walk badly, but they climb almost continually on the branches of trees, where they hold on, assisting themselves with their bills, like the parrakeets. They build their nests, which are spacious and round, in little groups; and Le Vaillant affirms that they sleep suspended with their heads downwards, and that, when it is cold, they are found so benumbed in the morning, that they may be taken one after the other. The number of eggs is generally five or six; and Lesson says that the flesh of the birds is delicate.

To the Colies must be added, as belonging to the same family, the Touracos.* They are most elegant birds, and feed principally on soft fruits. Their prevailing colour is green, varied, in some species, with purple on the wings and tail. They are natives of Africa, where they perch on the highest branches of the forest trees, and thus keep out of gun-shot. Le Vaillant, after many vain attempts, succeeded in bringing one to the ground; but he could not find it: and, stamping in his rage at the loss, he broke through into one of the covered pits which the Hottentots employed to catch ferocious animals, particularly elephants. This accident might have proved fatal. "When I recovered my first surprise," he says, "I began to consider how I should extricate myself from this embarrassment, extremely happy that I had not been impaled on the sharp-pointed stake placed in the bottom of the pit, and still happier that I found in it no company. I was, however, apprehensive that some might arrive every moment, especially if I should be obliged to remain there during the night." In this dilemma he fired his fusee at intervals; the shots, at last, were answered, and he was rescued by his Hottentots. But he did not forget his Touraco; and now, by the aid of his dogs, which had followed the Hottentots, found it squatted under a tufted bush. He afterwards laid snares for these birds on the fruit-trees to which they resorted to feed, and took them alive. With these birds we close our account of the ZYGODACTYLI, and proceed to the RASORIAL, or GALLINACEOUS.

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* Corythaix.

GALLINÆ.

ORDER IV.—THE GALLINACEOUS BIRDS.

The general character of the Gallinaceous birds is sufficiently clear and distinct. They are all granivorous, feeding principally, and almost exclusively, on vegetable diet. In some species the young are fed on the larvæ of ants, in addition to grains or berries. Some are exclusively terrestrial in their habits, being incapable of rising from the ground, from the rudimentary condition of their wings.

The body is stout, plump, and heavy, and, with some exceptions, the wings are round and concave, rendering flight slow and laborious. The limbs are generally strong and muscular, and the hind toe, instead of being placed on a level with the anterior portion of the foot, as in the ease with birds of the Insessorial order, is more or less elevated on the tarsus, so that in many examples its point only touches the ground, and sometimes not even that; while in others it is wanting entirely. In accordance with the nature of the food, the beak is strong and horny; but at its base, there is a space covered with a tough membrane, and in which the nostrils are situated.

From the muscularity of the limbs and the strength of the claws, the birds of this group are, for the most part, capable of scratching up the surface of the ground in quest of insects or grains. Many delight to throw the dust over their plumage, and wallow in the dry gravel or sandy earth. Swampy, humid situations are their aversion, and a continuation of heavy rains renders them dull and spiritless. In some, as in the grouse tribe, the wings are pointed; but even in these flight is not performed without considerable exertion, and a rapid vibration of the wings, accompanied by a loud whirring. This almost startling sound to an ordinary ear, is familiar to those who have "put up" pheasants and coveys of partridges.

One peculiarity appears in the internal structure of the present group of birds: it is a strong muscular gizzard, lined with a tough leathery membrane. By the action of its two muscular sides on each other, the seeds and grains, previously macerated in the crop, and there softened by a peculiar secretion oozing from glandular pores, and then swallowed, are ground up and triturated, in order that their digestion may take place.

The Gallinaceous birds are very prolific, and most are polygamous. As a rule, the nest is generally placed on the ground; the young are hatched covered with down, and, in a few hours, are capable of running about and following their parent. They pick up the food to which the mother conducts them, without having to be fed like the young of the finches and warblers in their snug nests, till they acquire the power of flitting alone. At night they find repose huddled up beneath their mother's wing.

The males of the species are extremely pugnacious, and will often fight till the death of one of the rivals. The females are devoted to their broods, and lose all sense of personal danger in their defence. Of none of the Gallinaceous birds is the flesh unfit for food. That of many is a delicacy, and, at the same time, easily digestible and highly nutritious. The qualities of pheasants, partridges, quails, and grouse certainly need no recommendation.

The First Family of the present Order is that of the Pigeons.*

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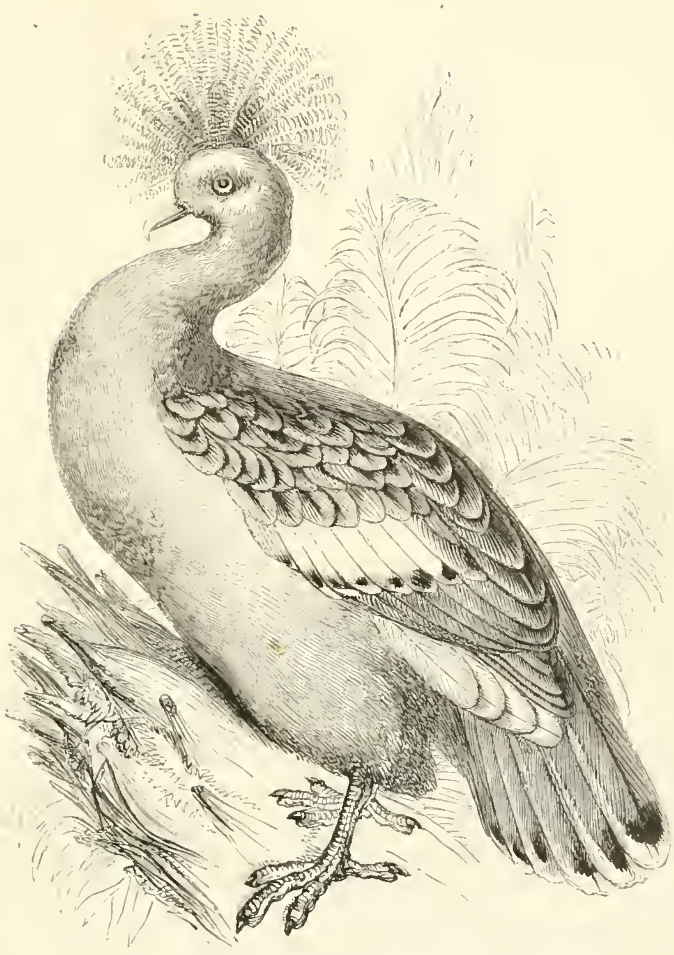
* Columbidæ.



THE CROWNED GOURA PIGEON.[*]

This magnificent and beautiful bird is a native of many of the islands of the great Indian Archipelago, being by no means rare in Java and Banda. In New Guinea it is abundant, as well as in most of the Molucca Islands. It inhabits the forests, and feeds upon berries, seeds and grain. It exceeds in size all the other Columbine species, being from twenty-seven to twenty-eight inches in extreme length. The bill, which is two inches long, is black; the tips of the mandibles are thickened, and that of the upper one moderately deflected. The head is adorned with a large, elevated, semicircular, and compressed crest, composed of narrow, straight feathers, furnished with disconnected silky barbules, and always carried erect. This, as well as the head, the neck, and all the inferior parts of the body, are of a pure grayish-blue colour. Its nest is built upon a tree.

These birds are easily rendered tamed; and in the East Indies they are frequently kept in court-yards, as poultry. They have all the habits of the common pigeons—billing, inflating the breast, and cooing. The sounds which they emit, however, are far from being so gentle as those to which we apply that term; they rather become a loud noise. It is said that M. Bougainville's sailors were greatly alarmed on hearing it for the first time, in the wild and unfrequented spots of some of the islands they visited; and no wonder, when they considered it to proceed from the savage cries of hostile natives in their ambush about to break forth upon them. Fear, when once excited, as is well known, strangely exaggerates what is seen, as well as what is heard.

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[*] Lophyrus Coronatus.—Vieill.

THE CARRIER PIGEON.

Such is the name given to one species of this numerous family, from the circumstance of the birds belonging to it carrying letters and small packets from one place to another. The carrier pigeon is easily distinguished from the other varieties by a broad circle of naked white skin round the eyes, and by its dark blue or blackish colour.

Sandys traces the use of these birds to a remote antiquity. He states that Thomostones gave notice to his father in Ægina, of his victory at the Olympian games the same day, by means of a pigeon stained with purple.

When, during the Crusades, Acre was besieged by the Christian forces, Saladin kept open a correspondence for some time with the besieged by means of these winged messengers; but one having been accidentally brought to the ground, by means of an arrow, before it reached the city, the stratagem was discovered, and the communication which would have animated the courage of those to whom it was addressed, by the announcement of speedy succour, being thus betrayed to the Christians, such measures were taken as compelled the surrender of Acre before Saladin could arrive to relieve it.

In former times the pigeon was employed in the English factory, to convey intelligence from Scanderoon to Aleppo, of the arrival of the company's ships in that port. The name of the ship, the hour of her arrival, and whatever else could be comprised in a small compass, was written on a slip of paper, and secured under the pigeon's wing, so as not to impede her flight; while her feet were bathed in vinegar to keep them cool, and prevent her being tempted by the sight of water, to alight, whereby delay might have been occasioned, and the billet lost.

The pigeons have been known to perform the journey in two hours and a half, the distance being betwixt sixty and seventy miles in a straight line. The messenger-bird had a young brood at Aleppo, and was sent, in an uncovered cage to Scanderoon, from whence, as soon as set at liberty, she returned with all speed to her nest. It was then usual, when the season had come for the arrival of the ships, to send pigeons to be ready at the port, but if the bird remained more than a fortnight, she would forget her young, and could not safely be trusted. The pigeons, when let fly from Scanderoon, instead of bending their course towards the high mountains surrounding the plain, mounted at once directly up, soaring almost perpendicularly till out of sight, as if to surmount at once all obstacles, intercepting their view of the place of their destination.

The rapidity of the flight of these birds is truly astonishing. Lithgow states that one of them would carry a letter from Babylon to Aleppo—which was usually to a man a thirty-days' journey—in the space of forty-eight hours. A wager was laid, some years ago, to determine the speed of these birds with some approach to exactness. A gentleman sent a carrier-pigeon from London, by the coach, to a friend in Bury St. Edmunds, in Suffolk, and with it a note, desiring that the pigeon, two days after its arrival there, might be thrown up precisely when the town clock struck nine in the morning. Accordingly, this was done; and the pigeon arrived in London, and flew into the Bull Inn, in Bishopsgate-street, at half an hour past eleven o'clock, on the same morning, having accomplished a flight of seventy-two miles in two hours and a half.

The attachment of the bird to its native place, and particularly to the spot where it has brought up, or is bringing up its young, was thus rendered useful to mankind. The bird was conveyed from its home to the place whence the information was intended to be sent, with the letter attached to its wing. At the instant of being let loose, its flight was directed, at an amazing height, to its home. By a remarkable instinct it darted onwards in a straight line to the very spot from whence it was taken; but how it could direct its flight so exactly, is a problem which we shall find it not very easy to solve.

"It must not be supposed," says Mr. W. C. L. Martin, "that this peculiar breed of pigeons is exclusively fitted for the purposes above described; any breed of good powers of flight will do, but this bird, from its swiftness on the wing, and its muscular energy, is doubtless superior; nevertheless, old birds, if not kept in active training, are heavy, and disinclined to very long flights. We once purchased a very young pair of black carriers, and having shut them up for a few weeks, gave them their liberty; after several circles high in the air, they started off in one direction, straight as an arrow, far out of sight.

"We gave them up for lost, and having paid a considerable sum for them, were not a little annoyed. This happened about eleven, A.M. At about four, P.M., while on the look-out, we heard a whirring of wings, and immediately the two birds settled on their dove-cote, and were eager for food and drink. Let it be remembered, that they had never been previously at liberty, and yet, after a voluntary excursion of many miles, they returned with unerring precision to their home; this was repeated so often till they began to breed, that it gave us no concern respecting their safety, the more especially as they flew above gun-shot reach.

"Is it by the eye that these birds travel from long distances to their home? We cannot doubt it. Hence, if very long distances are to be achieved, training is requisite; they must be accustomed, by a graduated series of removals, to at least the greater part of the road; and even then, if a fog obscures their waymarks, they are apt to wander and be lost.

"Short distances, however, will easily be performed without much training. Our theory is as follows: a carrier pigeon is taken to a distance, say, a hundred miles from home; it is turned loose, it mounts to a great elevation, and performs a series of circles, wider and wider still. At home it has performed the same. Now from any part of the circle, let it perceive an object which, while performing its circles at home, has caught its eye—it has at once a clue to the right direction; that object attained, a succession of others familiar to it are rapidly passed, till its home greets its keen and long-surveying powers of vision."

THE CARUNCULATED GROUND PIGEON.*

We have selected this bird from the decided analogy, or rather affinity, it shows to the true gallinaceous tribes—a likeness which is rendered still more striking by the accessory appendages which ornament the face and throat, and bear so direct an analogy to the wattles of the common domestic fowl.

This bird is a native of South Africa, and was first discovered by Le Vaillant in the Namaqua country. It builds its nest on the ground in some slight depression, making it of twigs and the stems of dried grasses, upon which the female deposits from six to eight reddish-white eggs, which are incubated alternately by both sexes.

In size it about equals the common turtle, but is thicker and rounder in the body. The base of the bill and forehead is covered with a naked red skin, and the chin is ornamented with a large wattle, which turns upwards on each side toward the ears. The head, the cheeks, the neck, and the breast, are of a purplish-gray; the mantle, the scapulars, and the wing-coverts are pale-gray; the feathers are finely margined with white.

These pigeons inhabit the forests of India, the Moluccas, Celebes, Australia, and the Pacific Isles. Their food consists of fruits and berries. That of the precious nutmeg, or rather its soft covering, known to us by the name of mace, affords at certain seasons a favourable repast to some species, and upon this luxurious diet they become so loaded with fat as frequently, when shot, to burst asunder when they fall to the ground. And here we may observe the remarkable provision nature has made for the propagation, as well as dissemination, of this valuable spice; for the nutmeg itself, which is generally swallowed with the whole of its pulpy covering, passes uninjured through the digestive organs of the birds, and is thus dispersed throughout the group of the Moluccas and other islands of the East. Indeed, from repeated experiments, it appears that an artificial preparation, analogous to that which it undergoes in its passage through the bird, is necessary to ensure the growth and fertility of the nut; and it was not till after many unsuccessful attempts had been made, that a lixivium of lime, in which the nuts were steeped for a certain time, was found to have the wished-for effect, and to induce the germinating tendency. The fruit of the Banyan (*Ficus Indica*), the sacred tree of the Hindoos, is also a favourite repast of many pigeons.

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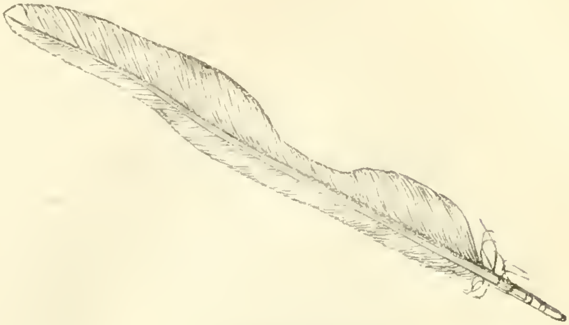
* Geophilus Caruncalatus.

Pigeons, it may be remarked, constitute a large and varied tribe. They are naturally birds of a wild and timid disposition, though one species has been partly reclaimed; and usually live congregated in extensive flocks, except during the season of reproduction, when they pair. Most of the species seek their food upon the ground. This consists of the different cerealia, as also acorns, beech-mast, and other seeds, and occasionally, of the green and tender leaves of peculiar plants. They drink much; not at intervals like other birds, but by a continued draught, like the quadrupeds. Their flesh is sapid and nutritious, being of a warm and invigorating nature. Their flight is powerful, very rapid, and can be long sustained, and many species are in the habit of making distant periodical migrations. They are widely disseminated, species of the genus being found in every quarter of the globe, and in all climates, except the frozen regions of the two hemispheres. They build in trees or holes of rocks, making a shallow nest of small twigs loosely put together. Their eggs are never more than two in number, their colour a pure white; they are incubated alternately by both sexes, and are hatched after being sat upon from eighteen to twenty-one days. The young, upon exclusion, are thinly covered with down, which is rapidly succeeded by the proper feathers.

In no tribe of the feathered race do we meet with a plumage better adapted to gratify and delight the eye, than that of the pigeons; for among the numerous species of which it is composed, there exists a diversity as well as a brilliancy of effect, that cannot be contemplated without admiration. In some, the plumage shines with a dazzling and metallic gloss, varying in tint with every motion of the bird, and which vies in lustre with that of the diminutive and sparkling humming-bird. Such is that of the *Carpophaga ænea*, *Oceanica*, and many other species. In other genera, as *Vinago* and *Ptilinopus*, the plumage is admirably assimilated to the arboreal habits of the pigeons, consisting of delicate shades of yellows and vivid greens, just sufficiently contrasted with smaller masses of richer or more resplendent hues to produce the happiest effect. In the typical groups again, a modest, yet chaste assortment of colours generally prevails, and which, though less striking at first sight, never fails to give permanent satisfaction to the eye. As the species approach the true Rasorial tribes, the colours become more uniform in tint, but still in certain lights are encircled by glossy reflexions, which especially prevail upon the region of the neck and breast.

In texture, the plumage is generally close and compressed, and the feathers feel hard and firm to the touch, from the thickness and strength of the rachis or shaft. Upon the neck they assume a variety of forms, in some species being rounded and stiff, and disposed in a scale-like fashion; in others they are of an open disunited texture, or with the tips divided and curiously notched; and in the *hackled* and *nicobar* pigeons, they are long and acuminate, like those of the domestic cock; and we may add, that in nearly all, they are so constituted as to reflect prismatic colours, when held at various angles to the light.

In all the species of the genus *Vinago* submitted to examination, the third quill has the central part of the web deeply notched, as if a piece had been cut out, as represented in the annexed engraving.

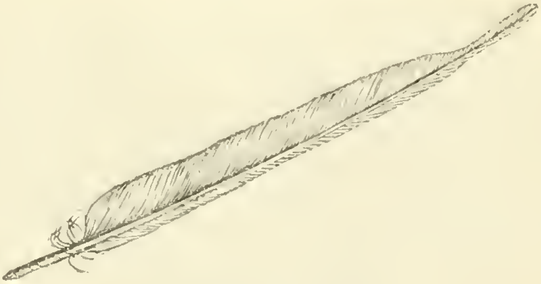


FEATHER OF VINAGO.

The genus *Ptilinopus* presents another peculiarity. Here the first quill feather of the wings is considerably shorter than the second, and suddenly narrowed towards the tips, as the engraving will show. This peculiarity is also possessed by several pigeons belonging to other distinct groups, and by which means a connexion is thus kept up between them.

One of the tricks practised on the first of April in former days was, to send those on whom they were to be played for half a pint of pigeon's milk; but as a black swan, long deemed an impossibility, has actually been found, so has the substance for which many have been sent on a fool's chace. Alluding to a provision that exists very similar to that of the milk in quadrupeds, the celebrated John Hunter makes the following statement:—

"I have, in my inquiries concerning the various modes in which young animals are nourished, discovered that all the dove kind are endowed with a similar power. The young pigeon, like the young quadruped, till it is capable of digesting the common food of its kind, is fed with a substance secreted for that purpose by the parent animal; not, as in the mammalia, by the female alone, but also by the male, which perhaps furnishes this nutriment in a degree still more abundant. It is a common property of birds, that both male and female are equally employed in hatching and in feeding their young in the second stage; but this particular mode of nourishment, by means of a substance secreted in their own bodies, is peculiar to certain kinds, and is carried on in the crop.



FEATHER OF PTILINOPUS.

"Whatever may be the consistence of this substance when just secreted, it most probably very soon coagulates into a granulated white curd; for in such a form I have always found it in the crop; and if an old pigeon is killed just as the young ones are hatching, the crop will be found as above described, and in its cavity pieces of white curd mixed with some of the common food of the pigeon. If we allow either of the parents to feed the young, its crop, when examined, will be discovered to contain the same curdled substance, which passes thence into the stomach, where it is to be digested.

"The young pigeon is fed for some time with this substance alone, and about the third day, some of the common food is found mingled with it; and as the pigeon grows older, the proportion of common food is increased; so that by the time it is seven, eight, or nine days old, the secretion of the curd ceases in the old ones. It is a curious fact, that the parent pigeon has at first the power to throw up this curd without any mixture of common food, although afterwards both are thrown up according to the proportion required for the young ones. I have called this substance curd, not as being literally so, but as resembling that more than anything I know. It may, however, have a greater resemblance to curd than we are, perhaps, aware of; for neither this secretion, nor curd from which the whey has been pressed, seem to contain any sugar, and do not run into the acetous fermentation. The property of coagulating is confined to the substance itself, as it produces no such effect when mixed with milk."

As to the varied members of this interesting family, Mr. Swainson remarks: "The extensive genus of *Columba*, like that of *Falco*, has been pronounced indivisible by an eminent ornithologist of the present day; who, from having made these birds his peculiar study, is, in one sense, pre-eminently qualified to give a decided opinion. The principle he has laid down, and consequently that on which this opinion is founded, is, that whenever intermediate species are discovered, which serve to unite two neighbouring genera, such genera should invariably be united." After stating that this theory has been refuted, Mr. Swainson continues: "It is admitted that there are certain peculiarities of form and of economy among the *Columbidæ*, which point out natural divisions. Some of these have been used for the construction of genera by MM. le Vaillant, Vieillot, and Cuvier, and of sections by M. Temminck; but the immense number of species already known, and the great influx of new ones, render it expedient that others should be formed. As we labour under a comparative ignorance of the natural economy of the vast number of tropical species, any attempt to throw the Columbidæ into their natural arrangement must be very imperfect. The basis of such a work must rest on their natural habits, their food, and their geographical distribution. Yet, as we see in other natural families, that a peculiarity of economy is almost invariably accompanied by some corresponding modification of structure, we shall receive considerable assistance by accurately examining such varieties. We may note the forms, without being acquainted with their reference to the peculiar habits of the group; and though our inference in some cases may be erroneous, in others we shall not be far from the truth."

Agreeing fully with these observations, we shall add descriptions of some other remarkable members of this family to those already given.

THE AROMATIC VINAGO.*

This bird may be taken as a specimen of the genus *Vinago*. They are of a mild and timorous disposition, and are generally seen in flocks and societies, except during the period of reproduction, when they pair and retire to the recesses of the forest. The nest is simple, and composed of a few twigs loosely put together, and the eggs are two. The base or softer part of the bill is a blackish-gray, the tip yellowish-white, strong, much hooked, and bulging on the side. The forehead is a bright siskin-green, the crown greenish-gray, the chin and throat gamboge-yellow, the remainder of the neck, the breast, belly, lower back and rump, yellowish-green. The upper back or mantle, and a part of the lesser wing-coverts, are of a rich brownish red, and exhibit a purplish tinge in certain lights. The legs and toes are red, the claws pale gray, strong, sharp, and semicircular.

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* Columba Aromatica.—Lath.

"This beautiful bird," says Mr. Selby, "has brilliant red eyes. Its feet are something like the parrots, and it climbs in the same way as that breed. It is very difficult to find; for although a flock is marked into a tree, yet its colour is so similar to the leaf of the banyan—on the small red fig of which it feeds—that if a bird does not move, you may look for many minutes before you can see one, although there are fifty in the tree."

THE MAGNIFICENT PIGEON.

The rich assemblage of colours exhibited in this bird induced M. Temminck, its first describer, to give it the appropriate name of magnificent. It is a native of the eastern parts of Australia, a country whose productions present so much of what is new and interesting in every department of zoology. It is said to feed chiefly upon the fruit of one of the palms, in that country called the cabbage-tree, from the culinary use made of the top, or embryo leaves. In size it equals, or rather surpasses, the common ring pigeon, the tail being longer in proportion. The bill, which is rather slender, has the soft or membranous part of a brownish orange; the horny top, which is yellowish-white, is slightly arched, but hard and compressed; the nostrils are open, and their covering but little swollen, and not projecting to the same extent as in the common pigeon; the forehead, as in other members of this restricted genus, is low and flat, and some of the feathers cover a considerable portion of the soft part of the bill. The head, the cheeks, and the upper part of the neck, are of a fine pale bluish-gray, which passes into pale green towards the lower part of the neck and back. The upper parts of the body are of a rich golden-green, assuming various shades of intensity as viewed in different lights; the wing-coverts are spotted with rich king's yellow, forming an oblique bar across the wings. The quills and tail are of the richest shining green, changing in effect with every motion of the bird. From the chin downwards proceeds a streak of the finest auricula purple (the base of the feathers being of a deep sapphire green); this line gradually expands as it descends and covers the whole breast and abdomen. The lower belly, thighs, and under wing-coverts, are of the richest king's yellow. The feet are bluish-black, the tarsi short and clothed with yellow feathers half-way down their fronts and sides; the claws strong, much hooked, and formed for prehension. Nearly allied to this species, if not a small variety of it, is the *Columba amarantha* of Lesson, which inhabits the islands of New Zealand and New Guinea.

THE PASSENGER PIGEON.*

Wilson's account of this remarkable bird is very graphic and striking, and to it we shall be indebted for our present description. Its roosting-places are always in the woods, which sometimes occupy a large extent of forest. When these birds have frequented one of those places for some time, the appearance it exhibits is surprising. The ground is covered to the depth of several inches with their dung; all the tender grass and underwood are destroyed; the surface is strewed with large limbs of trees, broken down by the weight of the birds collecting one above another; and the trees themselves, for thousands of acres, killed as completely as if girdled with an axe. The marks of their desolation remain for many years on the spot; and numerous places could be pointed out where, for several years after, scarcely a single vegetable made its appearance. When these roosts are first discovered, the inhabitants, from considerable distances, visit them in the night with guns, clubs, long poles, pots of sulphur, and various other engines of destruction.

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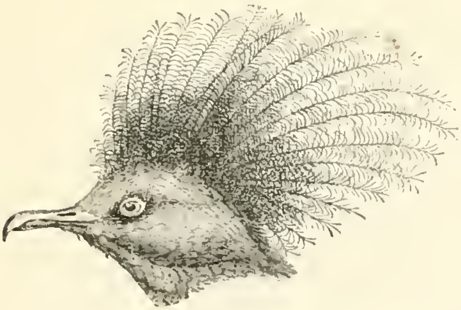
* Columba Migratori

In a few hours they fill many sacks, and load horses with them. By the Indians, a pigeon-roost or breeding-place is considered an important source of national profit and dependence for that season, and all their active ingenuity is exercised on the occasion. The breeding-places differ from the roosting-places in their greater extent. In the western countries, as the states of Ohio, Kentucky, and Indiana, these are generally in backwoods, and often extend in nearly a straight line across the country for a great way. Not far from Shelbyville, in the state of Kentucky, some years ago, there was one of these breeding-places, which stretched through the woods in nearly a north and south direction, was several miles in breadth, and was said to be upwards of forty miles in extent. In this tract almost every tree was furnished with nests, wherever the branches could accommodate them.

The pigeons made their first appearance there about tho 10th of April, and left it altogether with their young before the 25th of May. As soon as the young were fully grown, and before they left the nests, numerous parties of the inhabitants, from all parts of the adjacent country, came with waggons, axes, beds, cooking utensils; many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them stated that the noise was so great as to terrify their horses, and that it was difficult for any person to hear another speak without bawling in his ear. The ground was strewed with broken limbs of trees, eggs, and young squab pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, buzzards, and eagles were sailing about in great numbers, and seizing the squabs from the nests at pleasure, while, from twenty feet upwards to the top of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber: for now the axemen were at work cutting down those trees that seemed to be most crowded with nests, and contriving to fell them in such a manner, that in their descent they might bring down several others; by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one heap of fat. On some single trees upwards of one hundred nests were found, each containing one squab only; a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitudes above, and which, in their descent, often destroyed numbers of the birds themselves; whilst the clothes of those engaged in traversing the woods were completely covered with the excrements of the pigeons.



HEAD OF COLUMBA CORONATA.

HEAD OF COLUMBA MIGRATORIA.

These circumstances were related to Wilson by many of the most respectable portion of the community in that quarter, and were confirmed in part by what he himself witnessed. "I passed," he says, "for several miles through this same breeding-place, where every tree was spotted with nests, the remains of those above described. In many instances, I counted upwards of ninety nests on a single tree; but the pigeons had abandoned this place for another, sixty or eighty miles off, toward Green River, where they were said at that time to be equally numerous. From the great numbers that were constantly passing over our heads to and from that quarter, I had no doubt of the truth of this statement. The mast had been chiefly consumed in Kentucky; and the pigeons every morning a little before sunrise set out for the Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared on their return a little after noon. I had left the public road to visit the remains of the breeding-place near Shelbyville, and was traversing the woods with my gun on my way to Frankfort, when, about ten o'clock, the pigeons which I had observed flying the greater part of the morning northerly, began to return in such immense numbers as I never before had witnessed.

"Coming to an opening by the side of a creek called the Benson, where I had a more uninterrupted view, I was astonished at their appearance; they were flying with great steadiness and rapidity, at a height beyond gun-shot, in several strata deep, and so close together that, could shot have reached them, one discharge could not have failed of bringing down several individuals. From right to left, as far as the eye could reach, the breadth of this vast procession extended, seeming everywhere equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half-past one; I sat for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase both in numbers and rapidity; and anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed Kentucky river, at the town of Frankfort, at which time the living torrent above my head seemed as numerous and as extensive as ever. Long after this I observed them in large bodies that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same south-east direction till after six in the evening. The great breadth of front which this mighty multitude preserved, would seem to intimate a corresponding breadth of their breeding-place, which, by several gentlemen, who had lately passed through part of it, was stated to me at several miles."

Wilson then enters into a rough calculation of the numbers of this mass, and he comes to the conclusion, that its whole length was 240 miles, and that the numbers composing it amounted to 2,230,272,000 pigeons, observing, that this is probably far below the actual amount. He adds, that allowing each pigeon to consume half a pint of food daily, the whole quantity would equal 17,424,000 bushels daily. Audubon confirms Wilson in every point, excepting that he very properly corrects that part of the narrative which would lead to the conclusion that a single one only is hatched each time. The latter observes, that the bird lays *two* eggs of a pure white, and that each brood generally consists of a male and female.

The wonderful account, just given, of the roosting and breeding-places of the Passenger-pigeon is corroborated in every point by Audubon, who, in his delightful work, the "American Ornithological Biography," has added various other particulars connected with its history, which want of space alone prevents us adverting to; we cannot, however, pass over some of his observations on the mode of flight of these birds. "It is," he remarks, "extremely interesting to see flock after flock performing exactly the same evolutions which had been traced, as it were, in the air by a preceding flock. Thus, should a hawk have charged on a group at a certain spot, the angles, curves, and undulations that have been described by the birds in their efforts to escape from the dreaded talons of the plunderer, are undeviatingly followed by the next group that comes up. Should the bystander happen to witness one of these affrays, and, struck with the rapidity and elegance of the motions, feel desirous of seeing them repeated, his wishes will be gratified if he only remain in the place till the next group comes up."

His descriptions of their evolutions when a supply of food has been discovered, is also highly graphic. "As soon as the pigeons discover a sufficiency of food to entice them to alight, they fly round in circles, reviewing the country below. During their evolutions on such occasions, the dense mass which they form exhibits a beautiful appearance, as it changes its direction, now displaying a glistening sheet of azure when the backs of the birds come simultaneously into view, and anon, suddenly presenting a mass of rich deep purple. They then pass lower over the woods, and for a moment are lost among the foliage, but again emerge, and are seen gliding aloft. They now alight, but the next moment, as if suddenly alarmed, they take to wing, producing, by the flapping of their wings, a noise like the roar of distant thunder, and sweep through the forest to see if any danger is nigh. Hunger, however, soon brings them to the ground. When alighted, they are seen industriously throwing up the withered leaves in quest of the fallen mast. The rear ranks are continually rising, passing over the main body, and alighting in front, in such rapid succession, that the whole flock seems still on the wing. The quantity of ground thus swept is astonishing; and so completely has it been cleared, that the gleaner who might follow in their rear would find his labour completely lost."

THE NICOBAR PIGEON.*

This beautiful bird, though of a heavy form and ungraceful carriage, yields to none of its tribe in splendour of plumage, of which the prevailing hue is rich metallic green, with various reflexions of copper and purplish-red. It is generally described as residing habitually upon the ground, where it runs with great celerity, perching on the lower limbs of trees at night. Yet Mr. Bennet alludes to this species as usually seen perched on trees, even on the loftiest branches, "where," he adds, "it rears its young similar to all the pigeon tribe." It inhabits Nicobar, Java, Sumatra, and other Eastern islands.

HEAD OF COLUMBA NICOBARICA.

FOOT OF COLUMBA NICOBARICA.

THE HACKLED PIGEON.†

One of the most magnificent of the tribe is the hackled pigeon, distinguished by the irregular form of the feathers on the head, neck, and breast, which are long and narrow, and terminate in a shining appendage resembling in consistence, though not in colour, the tips of the wing-feathers of the Waxen Chatterer. It inhabits Southern Africa and the island of Madagascar.

THE PARABOLIC PIGEON.‡

Another singular species is the Parabolic Pigeon, discovered by Le Vaillant, and figured in his splendid work on the birds of Africa. The flight of this bird is very remarkable. It never proceeds in a straight line, but on commencing his route describes a parabola, and continues forming a series of arcs during the whole time, frequently uttering a peculiar cry. Its strange name, which cannot fail to strike the reader at a glance, is thus fully accounted for. This bird inhabits the forest of Anteniquois, and is so bold as to persecute the white eagle, a bird, as we have seen, of no ordinary power.

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* C. Nicobarica.—Lath.

† C. Franciæ.

‡ Columba Arquatrix.

THE RING-DOVE, OR CUSHAT.*

This is a bird widely disseminated throughout Europe, either as a permanent resident, or as a periodical visitant ; in the first state, in all those countries where the climate and temperature are such as to insure a constant supply of food ; and in the latter, in those higher latitudes where the rigour of winter is severely felt, and the ground for a long period remains covered with snow. Of its geographical distribution in other quarters of the globe, we can only speak with uncertainty, as it is evident that species, bearing a resemblance in form and colour, have been mistaken for it, and as such recorded in the relations of various travellers. Temminck mentions it in his "History of the Pigeons," as inhabiting parts of Northern Asia and Africa, and it is known to be a native of Madeira, as well as another nearly allied species, lately described in the "Illustrations of Ornithology," under the title of the Columba Trocaz. In America it has not yet been recognised, neither does it appear among the species which abound within the tropical latitudes of the ancient world. In Britain, it is distributed from one extremity of the kingdom to the other, residing permanently with us ; for, though subject to a partial movement upon the approach of winter, when the various individuals scattered over the country collect together and form extensive flocks, no actual migration takes place, but these congregated masses still keep within their respective districts. The magnitude of these winter flocks has, no doubt, suggested the idea that a migration from distant climes to this country annually takes place at this season of the year, and that the numbers of our native stock are thus augmented. We see no necessity, however, for supposing this to be the case, nor is it authorised by any observed or established fact. The species in districts favourable to its increase appears to be sufficiently numerous to account for the largest bodies ever seen assembled together.

This congregating of the ring pigeons takes place towards the end of October or beginning of November, at which time all the autumnal broods have become fully fledged, and they remain thus united till the beginning of February, when the first mild days and the genial influence of the ascending sun again call forth those instinctive feelings which urge them to separate and pair, and each to seek an appropriate retreat for the rearing of a future brood. At first, when thus congregated, they haunt the stubbles, or, in districts producing an abundance of beech-mast or acorns, the woods and trees ; but as these resources become exhausted, they resort to the turnip fields, the leaves and tops of which root they greedily devour. This food now constitutes their principal support during the winter and early spring months, or until the clover begins to sprout and the seed-corn is committed to the earth ; and it has been observed that the increase of the species has been progressive with that of the culture of this valuable root. The numerous and extensive plantations that of late years have been so generally made throughout the island, and which, in a young and close growing state, are peculiarly favourable to its habits, must also be taken into account, and perhaps these tend, in an equal degree to the cause above assigned,—the rapid increase of its numbers. When thus united, they repair to their feeding ground early in the morning, and again in the afternoon before they retire to roost, the middle of the day being passed in repose or digesting their first meal, upon the nearest trees. When thus perched, some are always upon the watch ; and so great is their vigilance, that it is almost impossible by any device to get within gunshot. In the evening they retire to the woods to roost, preferring those of the fir tribe and ash to any other; and in these nocturnal retreats great slaughter is sometimes committed, by waiting in concealment their arrival, which regularly takes place immediately after sunset.

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* Columba Palumbus.—Linn.

The first mild weather in February produces an immediate effect upon these congregated pigeons, and we may almost calculate to a day when their cooing and plaintive murmurs will again be heard in their wonted summer haunts. The flocks are now seen daily to decrease in magnitude, and in a short time every wood and copse becomes peopled with the numerous pairs of this lovely bird. The male soon after commences a flight peculiar to the season of courtship and love; this is a rising and falling in the air, by alternate movements, in which flight, and when at the greatest elevation, the upper surfaces of the wings are brought so forcibly into contact, as to be heard at a considerable distance. Nidification soon follows this well-known signal, and by the end of April, the young in many instances are fully fledged and ready to quit the nest. Few, however, of the early brood, comparatively speaking, attain maturity, as the eggs at this season, from the naked state of the woods, are early discovered by the prying eye and inquisitive habits of the cunning magpie and predacious carrion crow.

The nest of the cushat is a flimsy fabric, being a mere platform of small twigs loosely interwoven, so open, indeed, that the eggs, in one newly built, and before it becomes thickened by the droppings of the brood, may be seen through it from beneath; and so slight is the central depression that it frequently happens, where the incubating bird is suddenly disturbed, the eggs, in the hurry to escape, are tumbled from the nest, and perish upon the ground. The site selected for nidification is various, and no tree or bush seems to come amiss at certain periods of the year. In early spring, however, and before the deciduous trees acquire their umbrageous and leafy covering, firs and other evergreens are preferred, on account of the better concealment and protection they afford. From this diversity of site, the nest is necessarily placed at various elevations, at one time being far removed from the ground, as when it is built near the summit of a lofty spruce, or in the thick foliage of a beech or sycamore; at another, scarcely out of reach, and but a few feet from the earth, as we find it in the holly, the young fir, the the thorn, or other bushy trees. The eggs, always two in number, are white, of an oblong form, and rounded nearly equally at both ends. Incubation lasts from eighteen to twenty days, and both sexes sit alternately, the male taking the place of his mate when hunger compels her to quit the nest, and so *vice versa*. When first extruded, the young are blind, and their skin, of a blue or livid colour, thinly covered with a harsh yellow down. In this tender state, they are long and assiduously brooded over by the parent birds, and are fed with a milky pulp, ejected from the crop, where the food undergoes a partial digestion, preparatory to its being given to them. As they gain strength and become fledged, food is more frequently supplied, and, consequently, from its not remaining so long in the craw of the old bird, in a less and less comminuted form, till at length, previous to their finally quitting the nest, it is administered in a state but little altered from that in which it is first swallowed by the old birds.

The cushat is a wary bird, of powerful wing, not easily approached even in the forest glades, yet not seldom building in groves or groups of trees in the immediate vicinity of human dwellings; and a gentle pair has been observed sitting for hours upon the branches of an almost leafless sycamore in early spring, preening their feathers in assured confidence, within a few footsteps of the cottage door. Indeed, we have often noticed, as others must have also done, what may be called the *discrimination* of birds, in relation both to persons and to places. We allude to what we should call their accommodating rather than their natural instincts; how, for example, after a season or two of observation or experience, they will congregate around a spot where no rude hands disturb their mossy dwellings, nor climbing urchin shows his visage grim among the umbrageous boughs. This is beautifully exemplified (and on a larger scale than in a cottage garden) among the gladsome palace-groves of the Tuilleries and Luxembourg in Paris, where, notwithstanding the gay and giddy stream of life which constantly flows through those royal walks, the wood pigeon frequently builds her nest, though distant is her flight to rural solitudes for every offering which she brings her much-loved young.

The ring pigeon breeds twice in the year, viz., in spring, and again in autumn, a cessation taking place during the greater part of June and July, being a period of comparative scarcity, the seeds of such plants as they principally subsist on having then ripened or attained perfection. The autumnal brood, on account of the more effectual concealment of the nests by the now matured and thick foliage of the woods, is always more abundant than that of spring, and, in favourable districts, great numbers annually escape. In certain seasons, the young produced in autumn are subject to a peculiar disease, which destroys many of them even after they have quitted the nest. It appears in the form of large swellings, or impostumes, upon the feet and head, which, rapidly increasing, at length deprive them of sight and the power of perching, and they perish upon the ground, emaciated by hunger and disease. This complaint, for many years past, has been observed in the northern districts of the kingdom, but whether it prevails to an equal extent in other parts, we have had no opportunity of ascertaining. The flesh of both old and young is of good flavour, that of the latter being little inferior to the moor game, or grouse, which it is thought by many to resemble in taste. This, however, can only be said of it, so long as the bird derives its support from the stubbles, or the produce of the forest; for as soon as a deficiency of other food compels it to resort to the turnip field, the flesh becomes imbued so thoroughly with the strong flavour of the plant, as no longer to be fit for the table.

Though the ring pigeon frequently approaches our habitations during the breeding season in search of a site for its nest, and almost seems to court the vicinity of man, it always evinces a timorous disposition, and is startled and alarmed by the slightest motion or noise. In the winter, and when congregated, it becomes still more impatient of approach, and is then one of the most wary and watchful of the feathered race.

Various attempts have been made to domesticate the ring pigeon, but hitherto without success, for, although these birds may be rendered very tame when in confinement, they show no disposition to breed even by themselves, much less with the common pigeons, and upon being set at liberty, soon lose any little attachment they may have shown to the place in which they were reared, and betake themselves to their natural haunts to return no more.

Taking the species as a typical example of the restricted genus *Columba*, we find the bill of moderate strength, the tip without emargination, and gently arched, the nostril protected by a soft inflated membrane; the wings calculated for vigorous flight, the second and third quills being the longest, and nearly equal; the tail is square or even at the end; the tarsi short, and the feet adapted either for perching or walking; the outer and inner toes are of equal length, the hinder rather shorter than the tarsus, and not provided with so broad and flat a sole as that of the true arboreal pigeons. In size it is superior to the majority of the *Columbidæ*, measuring from sixteen to seventeen inches in length. The horny part of the bill is orange-yellow, the basal or soft part impending the nostrils covered with a white mealy substance. The head, cheeks, throat, neck, lower back, and rump, are bluish-gray, those of the side of the neck glossed with green, and bounded with a patch of white, which nearly meets behind, and forms an imperfect demi-collar round the lower and back part of the neck. The mantle, scapulars, and wing-coverts are deep bluish-gray. The breast and belly purplish-red, passing towards the vent and under tail-coverts into pale bluish-gray. The outer ridge of the wing and a few of the greater coverts are white. The quills are blackish-gray, their anterior webs conspicuously margined with white. The upper surface of the tail is of a bluish-gray at the base, passing gradually into black towards the tip. The legs and feet are purplish-red. The irides, yellowish-white.

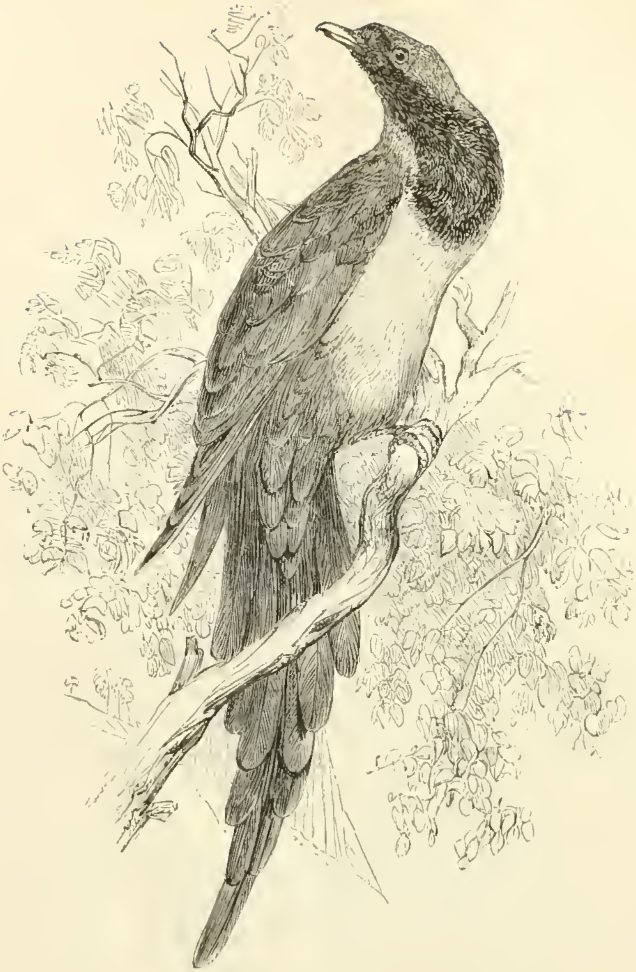
Our Scottish poet, Moir, thus addresses this bird :—

"Have I scared thee from thy bough,
Tenant of the lonely wild,
Where, from human face exiled,
'Tis thine the sky to plough :
Hearing but the wailing breeze,
Or the cataract's sullen roaring,
Where, 'mid clumps of ancient trees,
O'er its rocks the stream is pouring ?
Up on ready wing thou rushest
To the gloom of woods profound,
And through silent ether brushest
With a whirring sound.
Ring-dove beauteous! is the face
Of man so hateful, that his sight
Startles thee in wild affright
From beechen resting-place ?

"Surely pleasant life is thine,
Underneath the shining day;
Thus, from sorrow far away,
'Mid bowering groves to pine—
To pine with wild, luxurious love,
While coos thy timid partner near thee ;
Flowers below, and boughs above,
And naught around to fear thee ;
While thy bill so gently carries
To thy young from field or wood,
Seeds, or fruits, or purple berries,
For their slender food.

"Rapidly thou wing'st away—
I saw thee now, a tiny spot—
Again, and now I see thee not—
Naught save the skies of day.
The Psalmist once his prayer address'd—
'Dove, could I thy pinions borrow,
My soul would flee and be at rest,
Far from the world's oppressive sorrow!'
Alas! we turn to brave the billows
Of the world's tempestuous sway,
Where life's stream, beneath care's willows,
Murmurs night and day!"

"The notes of the ring-dove—for there are four of them, two produced by modulati and two by difference of time," says Mudie, "are soft and plaintive, but not melancholy, far superior to the monotonous croak (it is nothing better) of the domesticated pigeon. It of course varies with the season, but February is the month in which its song begins ; and it gives the preference to pine plantations, especially when they are not too tall. As it repeats its notes in the early part of the season, and is itself unseen while it does so, there is much interest about it ; and the young ornithologists often listen much and wander far in the coppice, and come home after all without seeing the cushat."



THE CAPE TURTLE.*

This pretty species measures six inches, but the great length of the tail gives it an appearance of bulk which it does not really possess, as the body scarcely exceeds in size that of the common lark. Its wings are moderately long, and reach, when closed, to about the third of the length of the tail; the second quill-feather rather exceeds the first, and is the longest in the wing. The tail, like that of the passenger turtle, consists of twelve feathers, the tips of which are rounded, except the two middle ones, which are generally worn to a point. The bill is very slender, without emargination, and the upper mandible very gently deflected towards the tip. The tarsi and toes are short, the claws blunt and but little hooked, showing it to be partly ambulatory in its habits.

As the name given to this bird implies, it is common around the Cape of Good Hope, and it is also met with in Senegal, Senegambia, and Nubia. Of its habits and manners we have no detailed account, except that it makes its nest in low trees and shrubs, and lays two white, pellucid-looking eggs, very fragile and easily broken. The male, of which we give an engraving, has the forehead, the region around the base of the bill, the chin, throat, and part of the breast, intense black. The colours of the female are more sordid.

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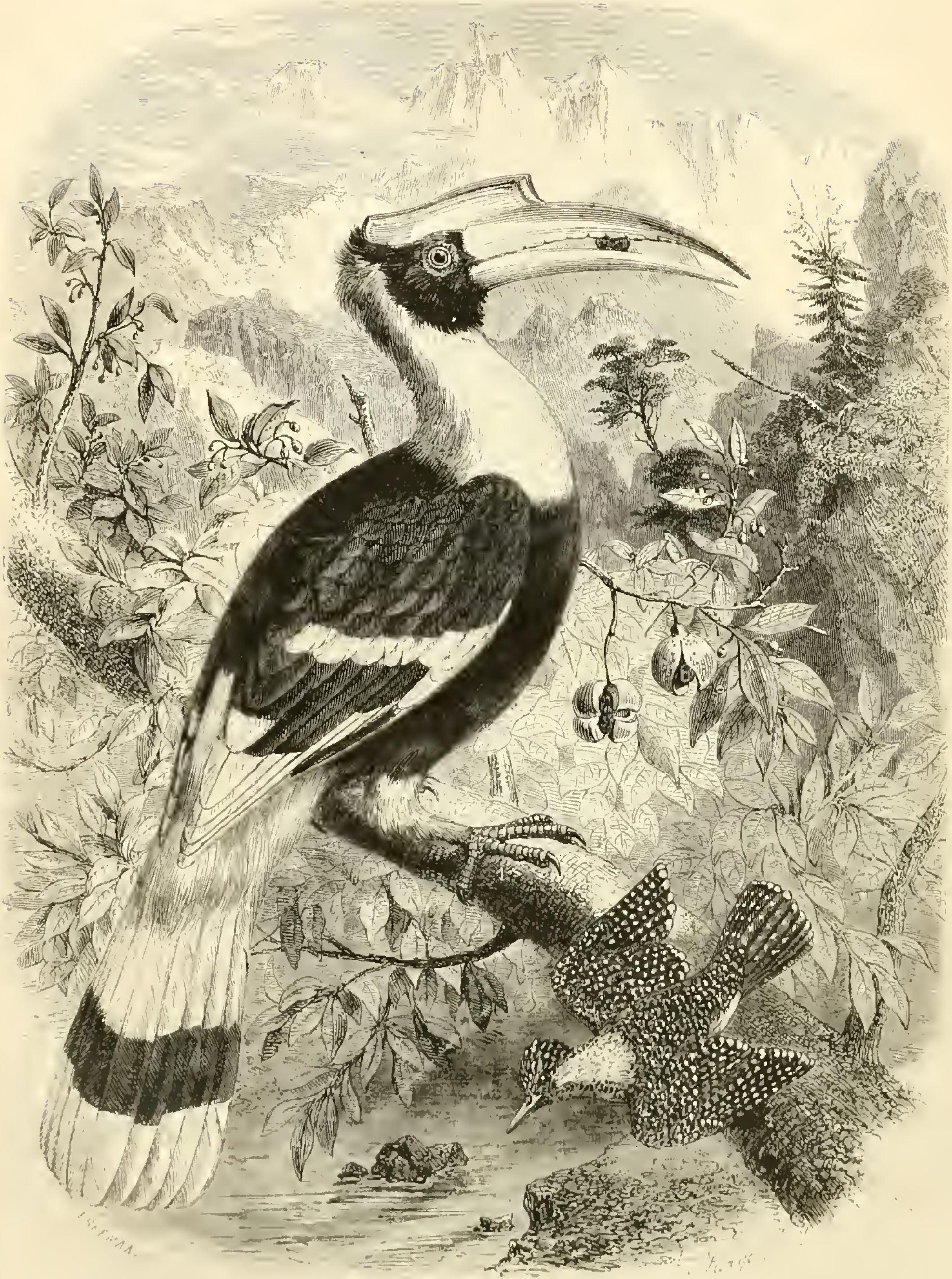
* Columba Capensis.—Auct.



THE CONCAVE HORNBILL.

From a very remote period this species appears to have been domesticated, or rather kept in that state of captivity in which it is retained at the present day. It is still abundant in Egypt and other parts of the East, where it is fostered and cultivated with care; and it is certain that many of the representations in the works of ancient art, where the dove figures as the emblem of tenderness and affection, or where it is depicted as the appropriate attendant of Venus, are accurate delineations of the collared or domestic turtle. This bird does not appear to be susceptible of that attachment to its home, or place of birth, for which the common or dove-cote pigeon is remarkable, and which peculiar quality renders that species so serviceable to man. On the contrary, like its congener, the common or wild European turtle (*Turtur communis*), it cannot be left to range at perfect liberty, without the danger of its flying away to return no more, and must therefore be kept constantly confined, either in cages or in aviaries adapted for the purpose.

In this state of captivity, if properly attended to, it breeds with facility, sometimes producing as many as eight broods within the year; but, being a native of warm climates, and very impatient of cold, it is seldom cultivated to the same extent in this country as it is in those where the temperature is better adapted to its constitution. The male shows great tenderness and affection to its mate, and is constantly by her side, soothing her with caresses, or paying his court by soft cooing notes, and that peculiar cry so expressive of laughter, and from which it takes its specific name. In its wild or natural state, it is found in various parts of Africa; and specimens have been obtained from the southern part of that continent, a description of which, as varying in depth and intensity of colour from the domestic variety, is here subjoined. The length is about ten inches. The chin is whitish; from the corners of the mouth to the eyes is a narrow streak of black. The forehead is pale bluish-gray; the crown darker; the cheeks, neck, breast and belly, gray, tinged with vinaceous or pale purplish-red; the hind neck with a demi-collar of black, some of the side feathers composing it being tipped with white. The back scapulars and rump are of a pale clove-brown, with a greenish tinge. The margins of the wings, the greater coverts and under wing-coverts are blue-gray. The greater quills are hair-brown, delicately edged with grayish-white. The tail is slightly rounded, the two middle feathers entirely clove-brown, the remainder on each side with the basal half-black. The tips bluish-gray, except those of the two outermost, which are white. The vent and under tail-coverts are white; the legs and feet gray; the inner toe a little longer than the outer. In its natural state this bird inhabits the woods, where it breeds, making a nest similar to that of the common turtle, and lays two white eggs. It seeks its food in the open grounds, and subsists upon grain, grass-seeds, pulse, &c. It is easily distinguished, and the place of its retreat soon discovered, by its cooing notes, one of which we have already stated to resemble the human laugh. A mixed breed is sometimes obtained between this species and the common wild turtle, but the progeny are invariably mules, and incapable of further increase; a fact that has been established by many careful and oft-repeated experiments, and one which affords a strong argument against the supposition, that many of the varieties of the common pigeon, or of the domestic fowl, are the result of a mixture of different species.

Besides the wild turtle, known to us as a regular summer visitant in the southern districts of England, there are the *Columba maculicollis,* and the *Columba aurita* of Temminck, and several others belonging to the group, of which the present species may be considered a type.

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* Turtur Risorius.

THE TURTLE-DOVE.*

In the male, the head and nape are of a vinous ash; on the sides of the neck there is a space composed of black feathers, terminated with white; the front of the neck, breast, and upper part of the belly, light vinous; the back brown-ash; the border of the wings bluish-ash; the other coverts rusty with a black spot at the centre of the feathers; the abdomen and lower parts of the tail pure white. The tail-feathers are blackish-ash; all, with the exception of the two intermediate ones, terminated with white; the lateral feather is white externally; the spaces round the eyes and the feet are red; the iris is a yellowish-red. The length of the bird is about eleven inches and a half.

The female has not the white front, nor the colour of the wings so bright; her quills are brownish, whereas they are blackish in the males.

Bechstein states that these birds are found throughout the temperate parts of Europe and Asia, and also in many of the South Sea Islands. He says that they do not arrive in the woods of Germany till the end of April or the beginning of May, and that they visit Greece much earlier, generally coming during the month of April, in four or five vast flocks. They have been seen in Asia Minor and Smyrna; and Temminck informs us that they are found high up in the north, but not in the regions of the Arctic circle.

> "Deep in the wood, thy voice I list, and love
> Thy soft complaining song—thy tender cooing;
> O, what a winning way thou hast of wooing!
> Gentlest of all thy race—sweet turtle-dove.
> Thine is a note that doth not pass away,
> Like the light music of a summer's day.
> The merle may trill his richest song in vain—
> Scarce do we say, 'List, for he pipes again,'—
> But thou! that low plaint oft and oft repeating
> To the coy-mate that needs so much entreating,
> Fillest the woods with a discursive song
> Of love, that sinketh deep and resteth long,
> Hushing the voice of mirth and staying folly,
> And waking in the heart a gentle melancholy." †

Frequenting woods, fir plantations, and high thick hedges dividing arable land, these birds make a thin, almost transparent, platform nest, eight or ten feet above the ground, in the forked branch of an oak or fir-tree, or near the top of a thick and tall bush. Upon this nest the female deposits two eggs about the middle of June. The eggs are white and rather pointed at the end. The parent-birds sit by turns, the male also occasionally feeding his mate during incubation, and both afterwards mutually labouring for the support of the young.

In England they are considered as producing but one brood in the season, but in France these birds are known to have a second pair of young. Their food is grain, particularly wheat; and they are constant visitors to the wheat-field while the corn is young, and to pea-fields; they also feed on rape and other small seeds. "In the autumn," says Mr. Yarrell, "they fly in small parties of ten or twelve birds, and leave England about the end of August, and sometimes as late as the end of September, particularly in those seasons when the harvest is backward. I have several times killed both adult birds and the young of the year when out partridge-shooting in Hertfordshire; but I have observed that these birds are more numerous in the thickly-wooded parts of the middle of the county of Kent than elsewhere."

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* Turtur Communis. Columba Turtur.

† Conway.

"A moral the reflective mind may draw
From the fond turtle-dove. Beyond compare
Its constancy; so faithful to its mate.
It cannot live apart from such strong ties.
Its love is that of harmony entire,
While life remains. And if death separates
One from the other's side, the lone one dies."

The dark, or black-coloured turtle-dove was employed by the Egyptians as the hieroglyphic of chaste widowhood, it being understood that when one of a pair was killed, the other never joined with a second mate. Pliny makes similar assertions, yet he overthrows them by other statements. Thus of pigeons, he says: "In very troth, these birds be soon seduced and trained away from their own homes; and they have a cast with them to flatter and entice one another: they take a great delight to inveigle others and to steal away some pigeons from their own flocks, and evermore to come home better accompanied than they went forth." Aristotle, too, though he hints, in one place, his belief in the common opinion, states in another that doves change their mates.

The dove is associated with far-distant times, and particularly with the catastrophe of the Deluge. Thus it has been regarded by the Rev. W. L. Bowles, in strains of great sweetness:—

"Ride on:—the ark, majestic and alone
On the wide waste of the careering deep,
Its hull scarce peering through the night of clouds,
Is seen. But lo! the mighty deep has shrunk!
The ark from its terrific voyage rests
On Ararat! the raven is sent forth,—
Send out the dove, and as her wings far off
Shine in the light, that streaks the severing clouds,
Bid her speed on, and greet her with a song:—

Go, beautiful and gentle dove,—
But whither wilt thou go?
For though the clouds ride high above,
How sad and waste is all below!

The wife of Shem, a moment to her breast
Held the poor bird and kissed it. Many a night,
When she was listening to the hollow wind
She press'd it to her bosom, with a tear;
And when it murmur'd in her hand, forgot
The long, loud tumult of the storm without.
She kisses it, and, at her father's word,
Bids it go forth.

The dove flies on! In lonely flight
She flies from dawn to dark;
And now, amid the gloom of night,
Comes weary to the ark.

Oh! let me in,—she seems to say,
For long and lone has been my way;
Oh! once more, gentle mistress, let me rest,
And dry my dripping plumage on thy breast.

So the bird flew to her who cherish'd it.
She sent it forth again out of the ark;
Again it came at evening fall, and lo!
An olive-leaf pluck'd off, and in its bill.

And Shem's wife took the green leaf from its bill,
And kiss'd its wings again, and smilingly
Dropp'd on its neck one silent tear for joy.
She sent it forth once more, and watch'd its flight,
Till it was lost amid the clouds of heaven:
Then, gazing on the clouds where it was lost,
Its mournful mistress sung this last farewell:—

Go, beautiful and gentle dove,
And greet the morning ray;
For lo! the sun shines bright above,
And night and storm are pass'd away:

No longer drooping, here confined,
In this cold prison dwell;
Go, free to sunshine and to wind,
Sweet bird, go forth, and fare-thee-well.

Oh! beautiful and gentle dove,
Thy welcome sad will be,
When thou shalt hear no voice of love
In murmurs from the leafy tree:

Yet freedom, freedom shalt thou find,
From this cold prison cell;
Go, then, to sunshine and to wind,
Sweet bird, go forth, and fare-thee-well."

Nor to that period is the interest of the dove confined;—hence it has been said:—

"Far down the vista of departed years
Thy notes have travelled, charming every ear,
And still as truly as in ages gone,—
When rains and biting frosts have past away,
When all we look upon is budding forth
As with fresh life and hope—intensely still
Man's heart rejoices at the turtle's voice;
But, as with all sweet things, her stay is short.
Scarcely have trees and flowers and odours fresh
Regaled our every sense, and filled our hearts,
Our lips, with grateful praise, than she is gone.
Autumn's rich tints, the brown and yellow leaves,
The gathering mist, no charms present to her;
Another clime she seeks, where verdure reigns
In full luxuriance, like to those she quits;
Bright sunny hours alone this bird will have;
And instincts fitted to such choice is hers,
And it to these. But we have reasons strong
For veneration towards this favourite bird.
In olden time, as Moses' records tell,
A trespass-offering, typical of Him
Who afterwards on Calvary shed his blood,
A sacrifice for sin—the Christ of God—
The turtle-dove was brought all undefiled,
With plaintive voice, submissive, gentle, true,
As in our days; what fitter type could be?"

The beautiful verses of Moore may well be added:—

"The dove let loose in eastern skies,
Returning fondly home,
Ne'er stoops to earth her wing, nor flies
Where idle warblers roam;

But high she shoots through air and light,
Above all low delay;
Where nothing earthly bounds her flight,
Nor shadow dims her way.

So grant me, Lord! from every stain
Of sinful passion free,
Aloft, through virtue's purer air,
To steer my course to Thee!

No sin to cloud, no lure to stay
My soul, as home she springs:
Thy sunshine on her joyful way,
Thy freedom on her wings."

THE STOCK-DOVE.*

The Stock-dove was so called from the erroneous idea of its being the stock to which the common pigeon may be referred. White, in his "History of Selborne," well distinguishes the stock-dove and the small blue rock-pigeon. He observes, that "unless the stock-dove in winter greatly varies from itself in summer, no species seems more unlikely to be domesticated, and to make a *house-dove*. We very rarely see the latter settle on trees at all, nor does it ever haunt the woods; but the former, as long as it stays with us, from November perhaps to February, lives the same wild life with the ring-dove; frequents coppices and groves, supports itself chiefly by mast, and delights to roost in the tallest beeches. Could it be known in what manner the stock-doves build, the doubt would be settled with me at once, provided they construct their nests on trees, like the ring-dove, as I much suspect they do."

Our information is now more extended than that of this interesting naturalist. We know that the stock-dove limits its range almost exclusively to the midland counties, and is common in Hertfordshire. It is rarely seen in the southern or western counties, and more rarely still in the northern. In winter the flocks are increased by accessions from the northern provinces of Europe, but these visitants depart in the spring. The stock-dove makes an artificial nest of twigs in the holes of decayed and time-worn trees, and in cavities on the top of pollards, but never places it on the forked or spreading branches of a tree. This bird is found, not only in Europe, but in various parts of Asia, and in the northern provinces of Africa.

THE ROCK-DOVE.†

The Rock-dove, as its name indicates, frequents rocks and precipices, especially along the sea-coast, and is by no means common. It is partial to deep caverns, in which it breeds. It haunts the caves in the cliff at St. Abb's Head, on the Berwickshire coast; those in the Isle of Bass; of Caldy Island, South Wales; and of the wild precipices of the Orkneys. It has often been seen on the steeples of churches near the coast, and numbers have been discovered inhabiting the holes and crevices in the higher parts of Canterbury cathedral. Selby states that it is numerous in the rocky islands of the Mediterranean, where it lives and breeds in caverns on the shore; and it is equally abundant on the north coast of Africa, especially in the Island of Teneriffe.

Speaking of the rock-dove, Selby says: "Although this species seems to have fallen frequently under the notice of our ornithologists (as may be gathered from their descriptions and the localities they have given to it), yet it has always been attended by the original supposition of this and the stock-dove being identical. In form and size they very nearly agree, the rock-dove being, perhaps, rather more slender. The predominant shades of each are also much the same; the principal variations consisting in the colour of the rump, which, in the stock-dove, is invariably bluish-gray, but in the rock-dove generally white; in the two distinct bands of bars (of black) crossing the wings of the latter bird; and in the colour of the breast and belly, which, in the stock-dove, is more of a purplish-red. The dissimilarity of their habits, however, marks even more strongly the specific difference between them, than the proofs drawn from the plumage, the stock-dove being a constant inhabitant of the woods, and frequently the interior of the country; but the species under consideration is, in its wild state, always met with inhabiting rocky places, and these principally on the sea-coast."

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* Columba Ænas.

† Columba Livia.

"It is to the rock-dove," says a recent writer, "a species almost invariably spread in its wild state throughout the Old World, that the domestic pigeon and its varieties must be referred. All these varieties breed with each other, and with the wild rock-dove; and without due care, all, as it is called, soon degenerate, and acquire the original form and colouring."

On this subject a highly intelligent naturalist, Mr. W. C. L. Martin, remarks: "To this opinion, were we not from experience aware of the difficulty of keeping up any remarkable strain in its purity, we should hesitate to subscribe; and we are not quite sure that there is not some ancient admixture of allied species (as we believe to be in the instance of the dog), whence, perhaps, arises a certain constitutional tendency to assume, at indefinite periods, varieties of form and contour. We doubt much whether any plans of treatment or inter-breeding would ever produce a carrier or horseman, so singularly specific are they in their characters; and of this we are sure, that if the brood be once extinct, no arts will ever consummate its renewal. Other varieties are far more easily accounted for; but this, of ancient lineage, descended from a remote line of oriental ancestry, has continued in distinctness to the present day. True, it has been inter-bred with baser strains by fanciers; but, more or less pure, its distinctive characters yet survive, often in high perfection. We may say the same, with some reservation, respecting the barb, a black pigeon with an occipital crest, and a naked circle of scarlet skin round the eyes."

THE DOVE-COTE PIGEON.

In most countries the common dove-cote pigeon is kept in abundance for the table, and the markets of most large towns are plentifully supplied with these birds. In the outskirts of Ispahan the pigeon-houses arrest the attention of the traveller, and at a distance might be taken for towers of defence or lofty strongholds. They are generally surmounted by smaller houses, capped with a sugar-loaf spire, having apertures for the exits and entrances of the birds. Inside, the breeding cells are placed in close array, furnishing accommodation for many hundreds. From these towers vast clouds of pigeons issue, and at one time they whirled about in masses so extensive and compact, as to obscure the sun when they passed overhead. In Persia, however, these birds are reared for the sake of their dung, which is used as a manure for melon-grounds; and in the neighbourhood of Ispahan, the melons are celebrated for their superiority.

The inhabitants of Syria and Palestine, like the western Asiatics generally, are fond of pigeons. Dove-cotes are conspicuous in most of the villages, and vast flocks of wild doves appear about the time the corn begins to ripen, and remain till the harvest is over. Hence the simile of the prophet Isaiah:—"Who are these that fly as a *cloud*, and as the *doves* to their windows?" While other allusions to these birds are equally natural.

"The dung of doves," says Morier, "is the dearest manure which the Persians use, and as they apply it almost entirely to the rearing of melons, it is probably on that account that the melons of Ispahan are so much finer than those of other cities. The revenue of a pigeon-house is about a hundred tomauns per annum; and the great value of this dung, which rears a fruit that is indispensable to the existence of the natives during the great heats of summer, will probably throw some light on that passage of Scripture, where, in the famine of Samaria, the fourth part of a cab of dove's dung was sold for five pieces of silver."

Many of our varieties are very beautiful, and they all present peculiarities of manner and flight, well known to those who take pleasure in these birds. The *tumbler* is remarkable for flying in circles, and throwing itself over backwards, so as to perform a somersault in the air; this evolution is often performed several times in succession before settling. The *fantail* has sixteen or eighteen tail-feathers, and it is distinguished by their being peculiarly arranged, like those of a fowl. This variety is usually white. The *pouter* is conspicuous, though not elegant, from its elevated figure, feathered legs, and distended crop. The *jacobin* is a small pigeon, commonly of a rusty-yellow, with a frill of reverted feathers down each side of the neck to the chest. The *nun* is a beautiful variety, of a pure white, excepting the head, quill-feathers, and tail, which are black.

THE PHASIANIDÆ.

We have now come to a varied FAMILY, bearing the name of the *Phasianidæ* Differing as its members do from each other in minor details, they are all united by strong ties of affinity. All are bulky in body, strong in limb, and have the wings short, rounded, and concave. The greater number, perhaps, roost on trees, and seek their food on the ground, which consists of grain, seeds, roots, and birds, and, occasionally, insects. Their organs of digestion are in strict accordance with their diet. Receiving their food into a spacious crop, it is, after due maceration, conducted to the gizzard, where it is reduced to a pulp. These birds have the peculiar habits of scratching in the ground and of rolling in the dust. Among them are found our domestic poultry, and many birds remarkable for their beauty, of which the pheasants and the peacocks may be mentioned as examples.

In this family we find

THE GUAN.*

This bird has long been domesticated in the poultry-yards of South America. It measures, when fully grown, about thirty inches in total length, of which the tail constitutes thirteen or fourteen. The upper surface of the body is of a dusky black or bronze colour, with a gloss of green, which becomes olive in certain positions with regard to light. There are long feathers at the back of the head, which form a thickly-tufted crest, capable of being raised or depressed at pleasure. A black stripe passes backwards from the under part of the bill, and encircles the ear. The fore part of the neck and breast are spotted with white, each of the feathers being surrounded by a white border; as is also the case with the belly and the legs, which have somewhat of a reddish tinge. The naked cheeks, extending from the bill to the eyes, are of a purplish violet; the iris reddish-brown; the bill blackish; and the legs red. From the naked part of the throat, which is of a bright scarlet, depends a more or less considerable fold of the skin, of the same colour, which is either elongated or entirely retracted in conformity with the state of excitement or inaction of the bird.

The female chiefly differs from the male externally in the whole plumage, and especially the under parts, having a decided tinge of red.

These birds, in a wild state, inhabit Guiana and Brazil, and probably extend still further to the north. Their food consists principally of seeds and roots, which they search for and eat on the ground; but the greater part of their existence is passed upon trees. On the tops of these they perch, and among their branches the guans build their nests. The females lay from two to five eggs. Their flight, like that of most gallinaceous birds, is low and heavy; and even then it is greatly aided by the tail, the feathers of which may be expanded in the shape of a fan.

All the birds of this genus appear to be known in Brazil by a name which is pronounced Jacou, which is supposed to be derived from their note. The structure of the trachea shows that this must be extremely loud; and a scientific traveller asserts, that when a considerable number of them are collected near the same spot, the very woods re-echo with their clamorous cries.

They are described as furnishing an excellent dish for the table. It is stated by M. Temminck, that the proprietor of a menagerie near Utrecht bred them for several years; and it seems that, with proper care and attention, these birds might easily be added to our domestic fowls.

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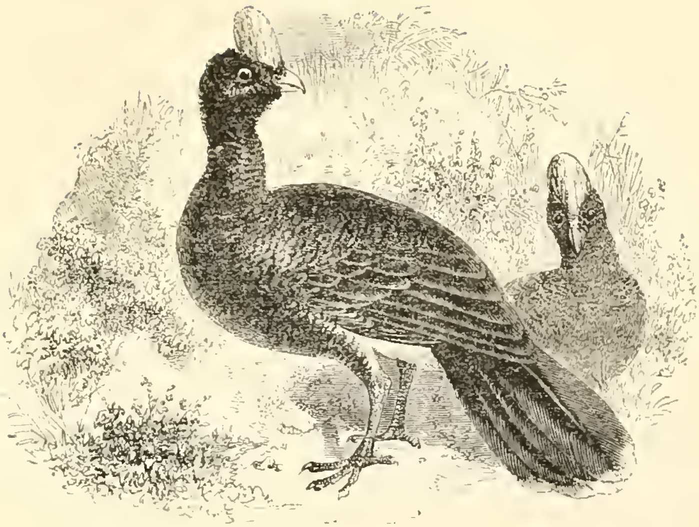
* Penelope Cristata.—Gmel.



THE GALEATED PAUXI.*

Nearly related to the birds just mentioned are the genera *Pauxi* and *Penelope;* but the form and coverings of the bill, and shape of the nostrils, together with the nakedness of the throat, and the lower position of the hinder toe in the last-mentioned genus, give them peculiarities which have led to their being placed alone. They are generally more or less remarkable for the development of their windpipes, which are frequently prolonged in sinuous convolutions; a structure which is rarely met with elsewhere among gallinaceous birds, although not infrequent in the swimming and wading orders.

In the present group the bill is shorter, deeper, and more compressed than it is in the curassows, to which birds they are also allied. Nor is this the only point of difference; for a protuberance frequently rises from the upper mandible, with the base of which it is continuous. This remarkable projection is, when fully developed, more than two inches long, and of a livid slate-colour. Externally it is hard and bony, but internally it is cellular; the cells communicating with the cavity of the mouth. After the first moulting it begins to appear as a small tubercle, which is common to both sexes; and is much larger in the male than in the female.

These birds are natives of Mexico. Their head and neck are covered with short, black, velvety feathers, and the remainder of the plumage is of a brilliant black, exhibiting, in certain lights, a tinge of green, with the exception of the abdomen and under tail-coverts, which are white.

They live in large bands, commonly building their nests on the ground, but perching on trees. Like the hen pheasant, or the common hen, the females lead their young about in search of food, which consists at first of worms and insects, and to these are afterwards added fruits and seeds.

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* Ourax Pauxi.—Cuv.

THE CRESTED CURASSOW.*

M. Sonnini possessed ample opportunities of seeing this bird in its wild state, in French Guiana, and to him we are principally indebted for our acquaintance with it. It adds to a simple, but elegant dress, mild and social manners. Its flesh presents an aliment equally wholesome and savoury, which proves an abundant and easy resource for the tables of the South American colonists, and especially for the subsistence of travellers who penetrate into the immense forests of that quarter of the globe.

The race of this bird is permanent; and though very numerous in some parts, it is the same in all the individuals. These birds have nothing wild or savage about them but their dwelling; mildness and tranquillity constitute their character, and they seem neither to fear, nor even to be acquainted with danger; careless, to all appearance, of the preservation of their existence, they do not fly from the occasions of losing it. Sonnini has often found himself in the midst of considerable flocks of these birds, which his presence did not appear, in the least, to intimidate. This carelessness on their part affords the greatest facility to their destruction; numbers of them may be killed, even with fire-arms, without their making any endeavour to escape, except by flying from one tree to another.

Such is the character of these birds in those mighty solitudes, where, having nothing to dread, they must naturally be without suspicion. But, with the small number that are found near human habitations, the case is very different: they become wild and distrustful; anything disturbs them; the least noise makes them betake themselves to flight. This continual agitation, and the frequent necessity of a prompt retreat, will not permit them to assemble in great numbers, and, accordingly, no more than two or three are ever seen together.

D'Azara says, that in Paraguay these curassows are never seen but in pairs, which is probably occasioned by the frequent attacks to which they are subjected in the environs of inhabited places.

Like almost all the birds that inhabit these southern countries, the curassows have no particular fixed time for breeding; it is, however, rather late in the rainy season, which lasts from seven to eight months in Guiana, than during the dry season, that the increase of these birds takes place. They have commonly but a single brood in the year. They show but little art or industry in the construction of their nests, placing them merely on some dry branches, in which they rudely interweave some blades of grass; and furnish the bottom with leaves. Here the females deposit some white eggs, nearly of the same size and form as those of the turkey-hen, but the shell is thicker. The number of these eggs vary in proportion to the age of the females, who never lay less than two, or more than six.

M. Temminck saw, in his childhood, a multitude of these birds produced and reared in the fine menagerie of M. Ameshoff, and living on the best terms with all the other fowls of the poultry-yard. He says, "It is probable that the races of these birds would still exist, if the proprietors of these vast menageries had had the public good for their object in such establishments; but it is to be regretted that most of them considered nothing but private enjoyment or emolument, accompanied by the vicious desire of concealing from the curious those productions of nature, the profit and pleasure arising from which they would direct to see diverted to the advantage of the public."

The establishment to which this naturalist refers was broken up by the civil commotions which followed in the train of the French Revolution, and all the pains which had been bestowed on the education of these birds were lost to the world by their sudden and complete dispersion. The establishment of the Zoological Society has, however, greatly tended to counteract the evil to which he also refers, and may secure the naturalisation among us of the curassows.

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* Crax Alector.—Linn.

Though commonly placed in the Rasorial order, the curassows recede from its typical characters in several important particulars. The principal of these occurs in the structure of the hinder toe, which is very long, far more robust than in the common fowl, and placed but little above the level of the anterior portion of the foot. In the remarkable modification which is thus presented, in so important a part of the organisation of birds, they offer an approximation to the Insessorial or perching order. This is further confirmed by their habit, connected with their conformation, of perching and building their nests on the branches of the tallest trees of the forest which they inhabit.

The curassows are distinguished by a bill of moderate length and considerable thickness, deeper than broad, covered at the base with a naked cere, with the upper mandible curved and vaulted from the base to the point, and sometimes surmounted by a gibbous protuberance; their nostrils are lateral, longitudinal, partly covered above, and open in front; their head ornamented with long curled feathers, forming a closely-tufted crest; their wings short; their tail rather long and formed of twelve broad pens; their legs moderately long, thick, and spurless; and their toes four in number, the three anterior united by a membrane as far as the first joint.

THE RED CURASSOW.*

This bird is rather larger than the common or crested species. When fully grown, its total length is nearly three feet. It is found, in its wild state, in South America. It is easily accustomed to the climate of England. M. Temminck states, that it was formerly bred in the menagerie of M. Ameshoff without any difficulty; and that its flesh is white, very succulent, and of exquisite flavour.

We proceed now to some specimens of the *Phasianidæ,* with which all our readers are well acquainted, so far as their general appearance is concerned—the Turkeys; of which we shall proceed to notice the wild and the domestic birds, the Honduras Turkey, which is very remarkable for its splendour of appearance, and the curious Brush Turkey of Australia, recently introduced to our notice by the indefatigable and most intelligent naturalist, Mr. Gould.

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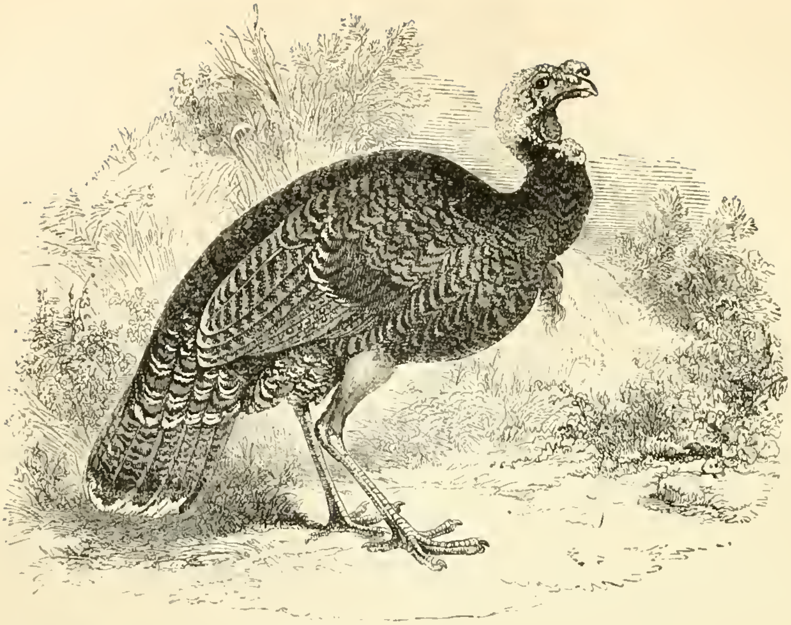
* Crax rubra.—Linn.



THE WILD TURKEY. *

Gay, long since, in the name of this part of the feathered race, poured forth this piteous lamentation :—

> "Man, cursed man, on turkeys preys,
> And Christmas shortens all our days.
> Sometimes with oysters we combine,
> Sometimes assist the sav'ry chine,
> From the low peasant to the lord,
> The turkey smokes on every board."

The complaint of this bird may still be uttered ; for so far from the ravages on its race being diminished, they must rather be greatly increased since the time when the poet gave it utterance. A visit to Leadenhall Market, just before Christmas, would astonish any of our readers who have not yet looked on its multitude of turkeys.

Much has been written, and more thought, as to the origin of these birds. "In England," says Willughby, "they are called turkeys, because they are thought to have been first brought to us out of Turkey." Ray, his friend and companion in science, however, knew better. In a "Perfect Description of Virginia," now some two hundred years old, we read that the colonists there have "Wilde turkies, some weighing sixtie pound weight." And to that country we must assuredly look as the one from whence we derived the domestic bird. When, however, the couplet is cited—

> "Turkeys, carps, hoppes, piccarel, and beer,
> Came into England all in one year,"

we confess we are not prepared to give it credence.

The *Meleagris* of the ancients was not a turkey, but a Guinea-fowl. Linnæus, however, has given this as the generic name for the turkeys, which were not known to the ancients, and ornithologists have continued it. Nor is this of much consequence. It is now generally known and satisfactorily proved that the Europeans only became acquainted with these birds after the discovery of America, from which one species has been spread, in a domesticated state, over the greatest part of the civilised globe.

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* Meleagris Gallo-pavo.—Linn.

The *Meleagris Gallo-pavo* is the original stock from which the domesticated turkey is derived.

The range of the wild turkey appears to extend from the north-western territory of the United States to the Isthmus of Darien. C. L. Bonaparte, Prince of Musignano, who is the chief authority on this subject, relates that when the Mandan Indians visited Washington, not many years ago, they looked on the turkey as a great curiosity, and prepared the skin of one to be carried home for exhibition. The wooded tracts of Arkansas, Louisiana, Tennessee, and Alabama, and the unsettled parts of the states of Ohio, Kentucky, Indiana, and Illinois, form the great nursery of this species; but their domain is daily contracting before the activity of the settler, and the turkey before long will cease to exist as a wild species.

The head of the wild male is small in proportion to the body; it is covered with a naked bluish skin, continued over the upper half of the neck, and uneven with warty elevations, changeable red on the upper portion and whitish below, and interspersed with a few scattered black hairs. The flaccid and membranous naked skin, also changeable on the lower part of the neck, extends downwards into large wattles. A wrinkled conical fleshy protuberance, capable of elongation, and with a pencil of hairs at the tip, takes its rise from the base of the bill, where the latter joins the front. When this excrescence is elongated under excitement, it covers the bill, and extends several inches below it. A tuft of long rigid black hair springs from the lower part of the neck at its junction with the breast, shooting out among the plumage to the length of nine inches.

The base of the feathers of the body, which are long and truncated, consist of a light fuliginous down; this part of the feather is succeeded by a dusky portion, which is again followed by a broad shining metallic band, varying from copper colour, or bronze, to violet, or purple, according to the play of the light, and the tip is a broad velvety band; but the last is absent in the feathers of the neck and breast.

The general plumage presents a glancing metallic lustre, which is, however, least glossy on the lower part of the back and tail-coverts. The wings are concave and rounded, not extending much, if at all, beyond the base of the tail. The tail is, at least, fifteen inches in length, rounded at the extremity; the feathers are eighteen inches broad, and capable of expansion and elevation with a fan-shape. The general colour of these feathers is brown mottled with black, crossed by numerous narrow undulating lines of the same. The bird stands high on its robust red legs, the scales of which have blackish margins; and the blunt spurs are about an inch long. The bill is reddish, but brown-coloured at the tip. The length of the bird is nearly four feet; the expanse of the wings more than five.

The female wild turkey has less of naked skin on the head and neck; they are partially covered with dirty feathers. The short caruncle on the front is incapable of elongation; and the tuft on the breast, which is not present in young birds, is in the older ones highly developed. The whole plumage is much more sombre than that of the male; but the colour of the tail is much the same. The length of the bird does not exceed three feet and a quarter.

The males associate in parties of from ten to a hundred, and seek their food apart from the females, which either go about singly with their young, at that time about two-thirds grown, or form troops with other females and their families, sometimes to the amount of seventy or eighty. These all avoid the old males, who attack and destroy the young, whenever they can, by reiterated blows on the skull.

But all parties travel in the same direction, and on foot, unless the dog of a hunter, or a river on their line of march, compels them to take wing. When about to cross a river, they select the highest eminences, that their flight may be more sure, and, in such positions, they sometimes stay for a day or more, as if in consultation. The males, on such occasions, gobble obstreperously, strutting with extraordinary importance, as if to animate their companions; and the females and young assume much of the pompous air of the males, and spread their tails as they move silently around.

At length, having mounted to the tops of the highest trees, the assembled multitude, at the signal-note of their leader, wing their way to the opposite shore. The old and fat birds, contrary to what might be expected, cross without difficulty, even when the river is a mile in width; but the wings of the young and meagre, and of course those who are weak, frequently fail them before they have completed their passage, when in they drop, and are forced to swim for their lives. This they do cleverly enough, spreading their tails for a support, closing their wings, stretching out their necks, and striking out quickly and strongly with their feet. All, however, do not succeed in such attempts, and the weaker often perish.

The wild turkeys feed on maize, all sorts of berries, fruits, and grasses; while tadpoles, young frogs, and lizards are occasionally found in their crops. The pecan-nut is a favourite food, and so is the acorn, on which last they fatten rapidly.

About the beginning of October, whilst the mast * still hangs on the trees, they gather together in flocks, directing their course to the rich bottom lands, and are then seen, in great numbers, on the Ohio and the Mississippi. When they have arrived at the land of abundance, they disperse in small promiscuous flocks of both sexes and all ages, devouring all the mast as they advance. Thus they pass the autumn and winter, becoming comparatively familiar after their journeys, and then venturing near plantations and farm-houses. They have been known, on these occasions, to enter stables and corn-cribs in search of food. Numbers are killed in the winter, and are preserved in a frozen state for distant markets.

The beginning of March is the pairing-time, shortly previous to which the females separate from their mates, and shun them, though the latter pertinaciously follow them, gobbling loudly. The sexes roost apart, but at no great distance, so that when a female utters a call, every male within hearing responds, rolling note after note in the most rapid succession; not as when spreading the tail, and strutting near the hen, but in a voice resembling that of the same turkey when he hears any unusual or frequently repeated noise.

When the turkeys are numerous, the woods, from one end to the other, sometimes for hundreds of miles, resound with this remarkable voice of their wooing, uttered responsively from their roosting-places This is continued for about an hour; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut for the purpose of winning the admiration of their mates.

If the call be given from the ground, the males in the vicinity fly towards the individual, and whether they perceive her or not, erect and spread their tails, throw the head backwards, distend the comb and wattles, strut pompously, and rustle their wings and body feathers, at the same moment ejecting a puff of air from the lungs. Whilst thus occupied, they occasionally halt to look out for the female, and then resume their strutting and puffing, moving with as much rapidity as the nature of their gait will admit.

During this ceremonious approach, the males often encounter each other, and desperate battles ensue, when the conflict is only terminated by the death or flight of the

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* In America, according to Audubon, the term *mast* is not confined to the fruit of the beech, but is used as a general name for all kinds of forest fruits, including even grapes and berries.

vanquished. The usual fruits of such victories are reaped by the conqueror, who is followed by one or more females, who roost near him, if not upon the same tree, until they begin to lay, when their habits are altered, in order to save their eggs, which the male breaks if he can get at them. They are usually from nine to fifteen in number, sometimes twenty, whitish and spotted with brown, like those of the domestic bird. The nest consists of a few dry leaves placed on the ground, sometimes on a dry ridge, sometimes in the fallen top of a decayed leafy tree, under a ridge of shumach or briars, or by the side of a log.

Audubon gives us the following remarkable fact: "While at Henderson, on the Ohio, I had, among many other wild birds, a fine male turkey, which had been reared from its earliest youth under my care, it having been caught by me when not more than two or three days old. It became so tame that it would follow any person who called it, and was the favourite of the little village. Yet it would never roost with the tame turkeys, but regularly betook itself by night to the roof of the house, where it remained until dawn.

"When two years old it began to fly to the woods, where it remained for a considerable part of the day; to return to the inclosure as night approached. It continued this practice until the following spring, when I saw it several times fly from its roosting place to the top of a high cotton-tree, on the banks of the Ohio, from which, after resting a little, it would sail to the opposite shore, the river there being nearly half a mile wide, and return towards night.

"One morning I saw it fly off at a very early hour to the woods, in another direction, and took no particular notice of the circumstance. Several days elapsed, but the bird did not return. I was going towards some lakes near Green River, to shoot, when, having walked about five miles, I saw a fine large gobbler cross the path before me, moving leisurely along.

"Turkeys being then in prime condition for the table, I ordered my dog to chase it and put it up. The animal went off with great rapidity, and as it approached the turkey, I saw, with surprise, that the latter paid little attention. Juno was on the point of seizing it, when she suddenly stopped, and turned her head towards me. I hastened to them, but you may easily conceive my surprise when I saw my own favourite bird, and discovered that it had recognised the dog, and would not fly from it; although the sight of a strange dog would have caused it to run off at once.

"A friend of mine, happening to be in search of a wounded deer, took the bird on his saddle before him, and carried it home for me. The following spring it was accidentally shot, having been taken for a wild bird, and brought to me on being recognised by the red ribbon which it had around its neck. Pray, reader, by what word will you designate the recognition, made by my favourite turkey, of a dog which had been long associated with it in the yard and grounds? Was it the result of instinct, or of reason—an unconsciously revived impression, or the act of an intelligent mind?"

The weight of the wild turkey has often been exaggerated, but even now these birds attain a great size. The average, according to Audubon, is from 15lbs. to 18lbs., but he mentions one in the market of Louisville, which weighed 36lbs. and whose breast-tuft was upwards of a foot in length. That eminent naturalist represents a cock turkey which was four feet and an inch in length, and the expanse of the wings five feet eight inches. C. L. Bonaparte, Prince of Musignano, says that birds of 30lbs. weight are not rare, and that he knew of some which weighed 40lbs.

Mr. Jesse heard, on what he regarded as good authority, that in the reign of George II., a large flock of wild turkeys, consisting of not less than three thousand, was regularly kept up as part of the stock of Richmond Park. "In the autumn and winter," he says, "they fed on acorns, of which they must have had an abundant supply, since the park was then almost entirely wooded with oak, with a thick cover of furze; and although at present eleven miles in circumference, it was formerly much larger, and connected with extensive possessions of the crown, some of which are now alienated. Stacks of barley were also put up in different places in the park for their support; and some of the old turkey-cocks are said to have weighed from 25lbs. to 30lbs. They were hunted with dogs, and made to take refuge in a tree, where they were frequently shot by George II. I have not been able to learn how long they had been preserved in the park before his reign, but they were totally destroyed towards the latter end of it, in consequence of the dangers to which the keepers were exposed in protecting them from poachers, with whom they had many bloody fights, being frequently overpowered by them."

"In one of the woods at Aston Hall, in Warwickshire," Mr. Jesse adds, "I saw, some years ago, both pea and Guinea fowl, in the same wild state. The common domestic fowl would, if properly encouraged, become an inhabitant of our woods, and their flesh approach to the flavour of the pheasant. In Windsor Great Park the experiment was tried, and perfectly succeeded, the fowls requiring no more care or feeding than the pheasant. I was assured that these wild fowls were remarkably fine, and partook very much of the flavour of the pheasant."

THE DOMESTIC TURKEY.

In a domesticated state the plumage of the Turkey varies as much or more than it does in the common poultry. White is far from uncommon; buff is more rare. But the most curious variety is that mentioned by M. Temminck, which was in Madame Backer's aviary at the Hague. This bird had a top-knot springing from the crown of the head; and a flock of a pale reddish tint, with an ample crest of pure white, were reared by the same lady.

The disposition of the female is, generally, much more mild and gentle than that of the male. Yet when leading out her young family to collect their food, though so large and, apparently, so powerful a bird, she usually gives them very little protection against the attacks of rapacious animals. La Pluche says: "I have heard a turkey hen, when at the head of her brood, send forth the most hideous screams, without my being able to perceive the cause: her young ones, however, immediately when the warning was given, skulked under the bushes, the grass, or whatever else seemed to offer shelter and protection. They even stretched themselves at full length on the ground, and continued motionless, as if dead. In the mean time, the mother, with her eyes directed upwards, continued her cries and screaming as before. On looking up, in the direction in which she seemed to gaze, I discovered a black spot just under the clouds, but was unable at first to determine what it was; however, it soon proved to be a bird of prey, though at first at too great a distance to be distinguished. I have seen one of these birds continue in this agitated state, and her whole brood pinned down as it were to the ground, for hours together; whilst their formidable foe has taken his circuits, has mounted, and hovered directly over their heads. At last, on his disappearing, the parent changed her note, and sent forth another cry, which, in an instant, gave life to the whole trembling tribe, and they all flocked round her with expressions of pleasure, as if conscious of their happy escape from danger."

The author of "Tabella Cibaria" says, that the bird is "so stupid or timorous, that if you balance a bit of straw on his head, or draw a line of chalk on the ground from his beak, he fancies himself so loaded, or so bound, that he will remain in the same position till hunger forces him to move. We made the experiment." To this statement Mr. Broderip adds: "We never did, but we doubt it not, though we cannot accept it as a proof of stupidity. How much wit may be necessary to balance a straw may be doubtful; but gallant chanticleer has never been charged either with fear or folly, and yet you have only to take him from his perch, place him on the table by candlelight, hold his beak down to the table, and draw a line with chalk from it, so as to catch his eye, and there the bird will remain spell-bound, till a bystander rubbing out the line, or diverting his attention from it, breaks the charm. Many a fowl have we thus fascinated in our boyish days."

These birds are extremely furious among themselves, and yet among other animals they are often weak and cowardly. The domestic cock often keeps them at a distance, and the turkeys seldom venture to attack him but with united force, when the cock is rather oppressed by their weight than annoyed by their weapons. Instances, however, have occurred in which the turkey-cock has not been found wanting in prowess. A gentleman of New York received from a distance a turkey-cock and hen, and a pair of bantams, which he put into his yard with other poultry. Some time afterwards, as he was feeding them from the barn-door, a large hawk suddenly turned the corner of the barn, and made a pitch at the bantam-hen. She immediately gave the alarm, by a noise which is natural to her on such occasions; when the turkey-cock, who was at the distance of about two yards, and no doubt was aware of the hawk's intentions and of the imminent danger of his old acquaintance, flew at the tyrant with such violence, and gave him so severe a stroke with his spurs when about to seize his prey, as to knock him from the hen to a considerable distance; and the timely aid of the faithful defender saved the bantam from being devoured.

The females lay their eggs in the spring, generally in some retired and obscure place; for the cock, enraged at the loss of his mate, while she is engaged in the process of incubation, is apt otherwise to break them. The female birds sit on their eggs with so much perseverance, that, if not taken away, they will almost perish with hunger before they will entirely leave the nest.

A singular deviation from instinct occurred in the case of a turkey-cock in Sweden. The female turkey was sitting on eggs; and as the cock in her absence appeared uneasy and dejected, he was put into the place with her. He immediately sat down by her side; and it was soon found that he had taken some eggs from under her, which he covered very carefully. The eggs were put back, but he soon afterwards took them again. This induced the owner, by way of experiment, to have a nest made, and as many eggs put into it as it was thought the cock could conveniently cover. The bird seemed in consequence highly pleased; he sat with great patience on the eggs, and was so attentive to the hatching of them, as scarcely to afford himself time to take the food necessary for his support. At the usual period, twenty-eight young ones were produced; and the cock, who was in some measure the parent of this numerous offspring, appeared perplexed on seeing so many little creatures picking around him, and requiring his care. It was, however, not thought proper to intrust him with the rearing of the brood; they were, therefore, taken away, and brought up by other means.

THE HONDURAS TURKEY.*

This bird is in size nearly that of the common turkey, but the tail is not so much developed; it is probable that the bird can spread it, but this has not yet been satisfactorily ascertained.

All the lower part of the body is a bronze-green, with two terminal bands, the first black, and the last, or that next to the tip, of a golden bronze hue. The tints on the other parts of the back are the same, but near the tail-coverts they are more vivid, the bronze becoming of a rich blue, or emerald-green, according to the incidence of the light, whilst the outer band becomes broader and more golden. Red mingles with the tints on the rump, where the plumage almost assumes the brilliant character of that of some humming-birds, and the bright border is separated from the blue by a band of velvety black. The hidden part of each feather is gray, mottled with black; and, indeed, upon the tail and upper coverts this gray is shown, forming bars, one of which, immediately succeeding the blue band, surrounds it, and gives each feather an ocellated appearance. Hence the name which is given to the bird.

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* Meleagris Ocellata.

THE BRUSH TURKEY.*

A very remarkable bird was originally described by Latham under the name of the New Holland vulture; but, subsequently, he removed it from among the vultures, and placed it among the birds of the gallinaceous order, to which it really belongs.

The Brush Turkey, or, as Mr. Gould terms it, the Wattled Talegalla, inhabits various districts of New South Wales, from Cape Howe on the south to Moreton Bay on the north. In some places, where it was once common, it has now become rare; and we learn that the cedar-cutters, and others, who are in the constant habit of hunting through the brushes of Illawara and Maitland, have nearly extirpated it from these localities. It is, however, still abundant in the dense brushes of the Manning and Clarence, and along the sides of the lower hills that branch off from the great range into the interior; on the Brezi range to the north of the Liverpool plains, and also on the hills on each side of the Samoi.

In its habits, the brush turkey is gregarious, associating in small flocks, which wander among the dense covert of the brush-wood; and it is shy and distrustful. It runs with great facility, and, from the nature of the localities it frequents, easily eludes pursuit. One of its greatest enemies is the dingo, or wild dog; and when hard pressed by this ferocious beast of prey, it springs to the lower branch of a tree, and, by a succession of leaps from branch to branch, ascends to the top. The whole flock act in concert, and, having ascended as high as they can, they either remain perched in security, or fly to a distant spot, where the tangled brush-wood promises a more effectual concealment. They are also in the habit of resorting to the branches of trees, as a shelter from the mid-day sun; and while thus reposing, they offer a sure mark to the sportsman, who may kill the whole flock, for they will allow a succession of shots to be fired without moving, or being roused from their lethargy. It is by taking advantage of their mid-day repose, that the colonists destroy them in great numbers, for the sake of their flesh, which is extremely delicate and tender, and is consequently in high esteem.

While wandering through the brush, these birds utter a clucking noise; their food consists principally of berries and various seeds; and, like our common poultry, they dust themselves in the soft ground, making bare depressions in the spots which they frequent.

The most interesting and remarkable circumstance connected with the economy of the brush turkey is, that it does not hatch its eggs by incubation; it does not sit upon them like other birds, not even occasionally, or during the night, but forms for them an "eccaleobion," in which they are hatched without the weary duties to which other birds are called by the laws of nature. "The brush turkey," says Mr. Gould, "collects together an immense heap of decaying vegetable matter, as a depository for the eggs, and trusts to the heat engendered by the process of decomposition for the development of the young. The heap employed for this purpose is collected by the birds during several weeks previous to the period of laying; it varies in size from two to four cart-loads, and is of a perfectly pyramidal form. The construction of the work is not the task of one pair of birds, but is effected by the united labours of several; the same site appears to me, from the great size, and the entire decomposition of the lower part, to be resorted to for several years in succession, the birds adding a fresh supply of materials previously to laying.

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* Talegalla Lathami. Gould.

"The mode in which the materials composing these mounds are accumulated is equally singular; the bird never using its beak, but always grasping a quantity in its foot, throwing it backwards to one common centre, and thus clearing the surface of the ground for a considerable distance so completely, that scarcely a leaf or a blade of grass is left.

"The heap being accumulated, and time allowed for a sufficient heat to be engendered, the eggs are deposited, not side by side, as is ordinarily the case, but planted at the distance of nine or twelve inches from each other, and buried at nearly an arm's depth, perfectly upright, with the large end upwards. They are covered up as they are laid, and allowed to remain until hatched. I have been credibly informed, both by natives and settlers living near their haunts, that it is not unusual to obtain nearly a bushel of eggs at one time from a single heap; and as they are delicious eating, they are eagerly sought after."

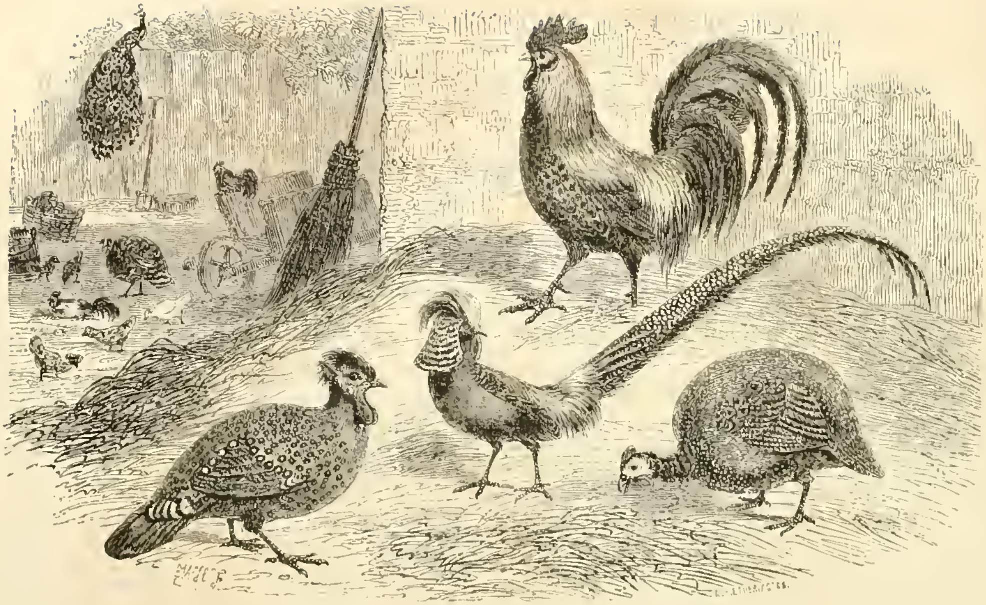
Some of the natives assured Mr. Gould, that the females are constantly in the neighbourhood of the heap, waiting for the time at which the hatching of the eggs takes place; and that they frequently uncover and cover again the eggs, as if for the purpose of ascertaining their progress, or of assisting the young to liberate themselves from their imprisonment. Others, however, denied this, and stated that the eggs were altogether forsaken, the young being left to liberate themselves. Unfortunately, Mr. Gould was not in the districts inhabited by these birds during the breeding season; but he inclines to the latter statement, and thinks that, from the great size of the egg, there is room for the young to become more fully developed than in ordinary cases, and that they are hatched capable of taking care of themselves. In confirmation of this, he observes that, in searching for eggs in one of the mounds, he discovered the remains of a young bird, apparently just exuded from the shell. It was clothed, not with down, as is usual, but with feathers—a proof, if indeed the bird died when just escaped from the shell, that it was more advanced than is the young of the common fowl, or any kind of poultry, at the same crisis.

Mr. Gould also thinks the opinion that the eggs, once deposited, are never disturbed afterwards, to be corroborated by the fact that they are always found upright. But it may here be remarked, that though the parent-birds may occasionally uncover the eggs, it does not follow that they alter the position of them. Nor is the discovery of a young bird feathered, which appeared as if newly hatched, a proof either that the parents neglect the eggs or the young. These points yet remain to be determined.

Mr. Gould saw several of the mounds formed by these birds, both in the interior of the country and at Illawara. "In every instance, they were placed in the most retired and shady glens, and on the slope of a hill." The ground above the nest was always scratched clean, while that below the nest appeared to be untouched; as if the birds had found it more convenient to bring the materials for its construction down the hill, than to throw them up.

The eggs are perfectly white, of a long, oval figure, and three inches and three quarters in length.

The wattled talegalla is about the size of a common turkey, three parts grown. The adults have the whole of the upper surface of a blackish brown. The feathers of the chest are edged with silvery gray. The skin of the head and neck is of a deep red, and thinly sprinkled with short hair-like feathers; the sides of the neck, at its lower part, are ornamented with a bright yellow wattle, or fleshy excrescence, capable of being expanded or contracted at will, as in the common turkey. The female is rather less than the male, and the wattles are not so much developed; her colour is the same.



THE GUINEA-FOWL* AND OTHER GALLINÆ.

The Pintado is the bird formerly known to the ancients under the name of Meleagris, or Numidian Fowl. The common name employed in this country is the Guinea-Fowl. The wild birds inhabit the western coasts of Africa, and principally towards the south, from the Cape of Good Hope as far as the coast of Guinea. Many broods unite together, forming a large flock, flying in bands, and returning at fixed hours to the springs or neighbouring rivers to drink. At sunset they retire into the woods, and perch themselves on trees to pass the night.

In the poultry-yard they pursue all the species of fowl with which they happen to be placed, and maintain with them an obstinate and continual war. They are lively, restless, and impetuous. M. Temminck frequently and vainly tried to make them mix with the pheasants in the woods, but always without success. The pheasants invariably gave way to these new and troublesome guests, and sometimes they would quit the neighbourhood altogether. The pintados are clamorous and troublesome birds. Their monotonous and disagreeable cry has been compared to a door grating on rusty hinges. It may be represented by the syllables *ccuk*, *ccuk*, pronounced forcibly, and with a rough voice. When this wretched noise becomes wearisome to themselves, they then change it for a little cry which may be indicated by the syllables *chi-wi*.

The female lays usually at the end of May, or in the early days of June, and the eggs are generally from sixteen to twenty-four in number. The shell is very hard, of a yellowish white, spotted with small brown points. They are deposited in a retired place under some bush. The incubation lasts three weeks and four days. The female seldom sits with any assiduity, nor when the young are disclosed does she display for them any great affection. The casque on the top of the head, and the barbles of the lower jaw, are not to be distinguished before the birds are six months old.

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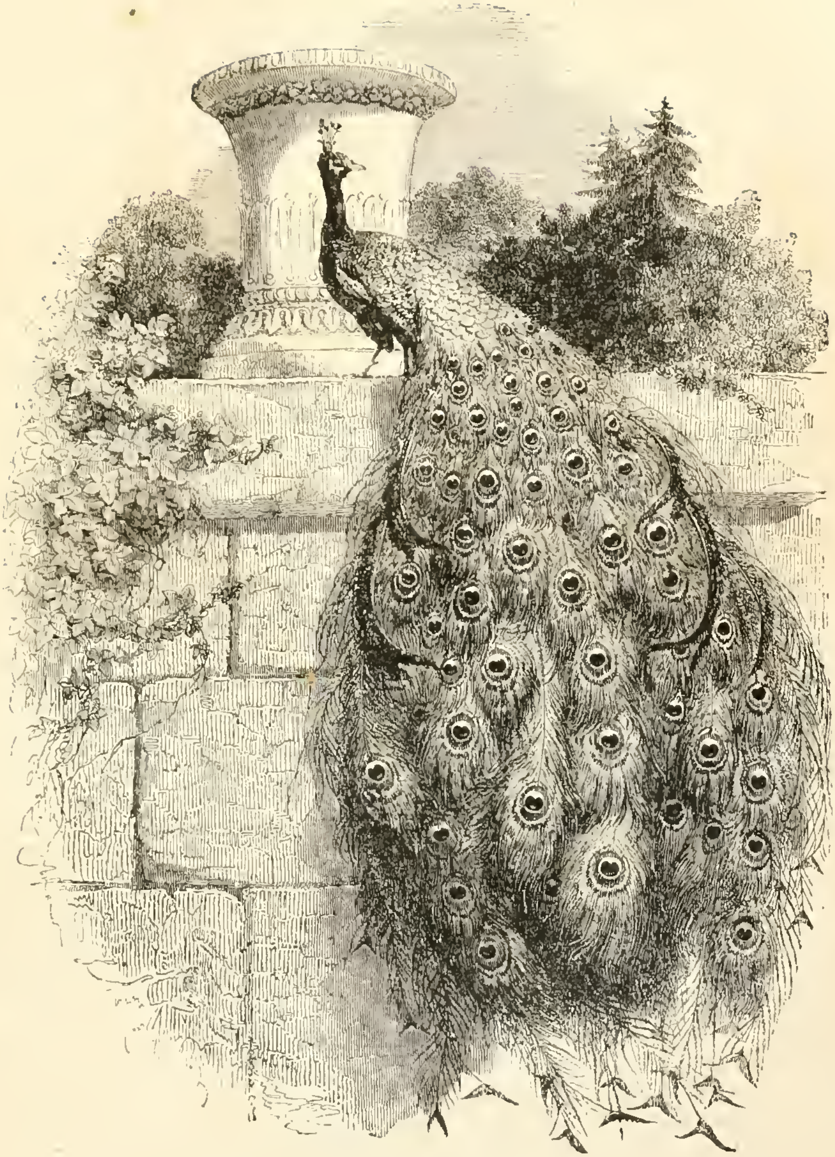
* Numida Meleagris.



THE PEACOCK.*

The Peacock was originally brought from India, and thence into Persia and Media. Aristophanes mentions "Persian peacocks," and Suidas calls the peacock "the Median bird." In the Scriptures it is enumerated among the costly articles imported by the ships of Tarshish, employed by Solomon to enrich his country with the remarkable products of foreign nations. The fleet of the Hebrew monarch might easily procure it either from India or Persia. From Persia it was gradually diffused through India, Egypt, Greece, and Europe.

The cradle of the peacock has long since been determined. It is in the countries of southern Asia and the vast archipelago of the Eastern ocean that this bird appears to have fixed its dwelling, and to live in a state of freedom. Such is the testimony of numerous travellers who are worthy of implicit confidence. The chase of the peacock is well known to form one of the chief amusements in Bengal, and in the islands of Java and Sumatra; but this is a somewhat dangerous sport, as the proximity of the tiger in those places where the peacocks most abound obliges the hunter to use much circumspection, for this dreaded beast of prey shows a peculiar predilection for the flesh of these birds.

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* Pavo Cristatus.

Colonel Williamson, in his account of peacock shooting, states that he had seen, about the passes of the Jungletery district, surprising quantities of wild pea-fowls. Whole woods were covered with their beautiful plumage, to which the rising sun imparted additional brilliancy. Small patches of plain among the long grass, most of them cultivated, and with mustard then in bloom, which induced the birds to feed, increased the beauty of the scene. "I speak within bounds," continues the colonel, "when I assert that there could not be less than twelve or fifteen hundred pea-fowls, of various sizes, within sight of the spot where I stood for near an hour."

According to the same authority, it is easy to get a shot in a jungle; but when the birds flocked together, which they do to the amount of forty or fifty, there was greater difficulty. Then they are not easily raised, and run very fast, so fast, indeed, that the colonel doubts whether a slow spaniel could make them take wing. They fly heavy and strong, generally within an easy shot; if winged only, they usually escape from their swiftness of foot. They roost on high trees, into which they fly towards dusk.

M. Temminck had an opportunity of examining two males of the wild peacock; these birds resembled each other perfectly, and were as familiar as the domestic peacocks. In brilliancy of plumage the wild peacock stands unrivalled among the feathered race. In his incomparable robe we find united all the brilliant colours which we admire separately in other birds,—all that glistens in the rainbow, and sparkles in the mine—the azure tints of the sky, and the richest emerald of the fields.

The wild peacock is almost the size of a hen-turkey. The length from the end of the bill to the extremity of the tail is four feet five inches; the tail alone is nineteen inches. It is the richly assorted colours of the alar-coverts that constitute one of the principal differences between this bird and the domestic peacock. The wild pea-hen has but one brood in the year; she lays from twenty-five to thirty eggs, which she deposits on the ground in well sheltered places, where they are secure from the assaults of the tiger.

Well may it be said:—

"Bird of refulgent tints, whose beauty charms
The eye of all beholders! dazzling bright
Thy lovely plumage, spreading to the sun;
Most striking of the living objects known.
Who but a God could wings construct like thine?
Well might the patriarch Job His wisdom praise,
In this one proof of the Omnific hand;
Gav'st Thou, said he, the goodly peacock's wings?[*]
Take but one plume and scrutinise it well,
Look at the fragile, slender, tapering shaft,
Fringed as it is with long loose silken barbs,
Glittering in splendour with metallic light,
Now green, now golden, as if liquid fire.
The ocellated disc with which is tipped
The whole, what words can speak its varying hues!
Its purple how intense, its emerald green,
Which circles round this deep rich dye,
Who can imagine? Or the broad expanse
Of choicest bronze, a rich though soberer tint?
And then, again, who shall attempt to paint
The margins delicate of yellow green,

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[*] Job xxxi. 13.

And these all fringed with countless waving threads,
Of colours varying, purple, green or bronze?
Say, who can copy these transcendant tints?
Art shrinks from the attempt, Nature alone
Has skill to manufacture dyes like these!
Vain man may call them the effect of chance,
But he who thinks aright God's hand beholds!"

If the empire of the feathered tribes were claimed by beauty, and not by power, the peacock would be regarded by the multitude as the king of birds. The elegance of its form, and the brilliancy of its plumage, are exceeded by none of the feathered race. Its large size, imposing manner, firm tread, and noble figure; the rich crest upon its head adorned with the most brilliant colours; its matchless plumage, appearing to combine everything that can delight the eye—all unite to give it a peculiarly distinguished place. The Romans were well acquainted with this gorgeous bird. It was called "the bird of Juno" by the poets, who feigned that with the eyes of Argus she adorned its tail, and thus bestudded it with gems—"*et gemmis caudam stellantibus implet.*"

The peacocks constitute the great ornament of menageries. During summer they are fond of living in an extensive space, where they can choose elevated situations for perching. But in winter it is necessary to place them under shelter against the inclemency of the weather. The preferable habitation for them is one in which they can perch. The season of reproduction with the peacocks commences at the end of March or the beginning of April. There is an interval of one day between the laying of each egg. When they are taken away, according as they have been laid, the entire brood will amount to eight or twelve. The eggs are of the bulk and form of goose-eggs, of a fulvous white, with spots or points of a deeper hue. The pea-hens are not very assiduous in hatching, and often quit their eggs to fly to some elevated place. The young pea-chicks rarely follow the mother to elevated situations until four weeks have elapsed. About this time the aigrette begins to appear.

Until the second year the male and female have the same plumage. In the third year, the long dorsal plumes of the male begin to appear, and it is then that these birds begin to whirl about the tail, and to court the attention of the females. The pea-hen does not begin to lay till the third year. From the small extent of the wings, it would appear that the flight of the peacocks must be low and heavy; still they can make tolerably long passages in the air. Æolian extends their life to one hundred years, an opinion to which Willughby assents; but it does not continue more than a quarter of that space.

"For a good many years," says Sir Robert Heron, "I have attended to the habits of pea-fowl. I find the individuals to differ as much in temper as human beings. Some are willing to take care of the young of others, whilst some have pursued and killed them, and this whether they had a brood of their own or not. Some cocks have assisted in the care of young ones, whilst others have attacked them. An early hen has frequently herself a brood the next year. Age makes no difference in the number of the brood. I have had six from a hen a year old, and one from an old hen. The hens have frequently a preference for a particular peacock. They were all so fond of an old pied cock, that one year, when he was confined in view, they were constantly assembled close to the trellised walls of his prison, and would not suffer a japanned peacock to touch them. On his being let out, the oldest of the hens instantly courted him. The next year he was shut up in a stable, and the hens then all courted his rival; for the advances of these birds are always made by the female.

"The japanned breed are, I believe, a variety originating in England. In Lord Brownlow's numerous breed of common, white, and pied, the japanned suddenly, in my memory, appeared amongst them. The same thing happened among Sir J. Trevelyn's flock of entirely the common sort; also in a brood of common and pied, given by Lady Chatham to Mr. Thoroton; and in both cases to the extinction of the previously existing breed." The common peacock varies in its plumage accidentally. Thus there are pied varieties, and one entirely white.

Buffon says: "The brilliant plumes of the peacocks, which surpass in beauty the fairest flowers, wither like them, and fall with each succeeding year. The peacock, then, as if sensible and ashamed of his loss, fears to be seen in this humiliating state, and seeks out the most gloomy retreats in which to conceal himself from every eye, until returning spring restores him to his accustomed splendour, and brings him back upon the scene, to receive the homage which his beauty inspires. It is pretended that, in reality, he enjoys admiration, and that the true method to engage him to display his fine plumage, is to bestow attention and praise upon him; and that, on the contrary, when he is neglected, he folds up his treasures, and withdraws them from the view of those who know not how to appreciate them."

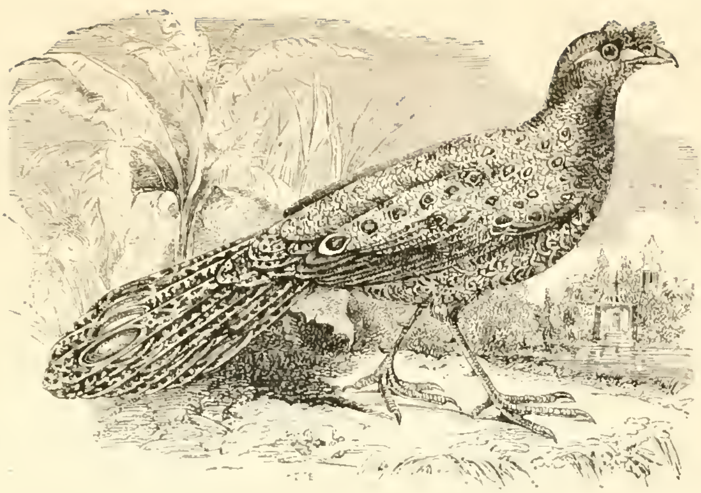
THE WHITE PEACOCK.

The name of a *white* peacock suggests a similar idea to that which was formerly associated with the name of a *black* swan; yet each of these birds has an actual existence. The white peacock, however, is not, as some have supposed, a bird of the Arctic regions. Animals, it is true, are found in those countries, whose principal livery is a pure white, and this colour is spread in greater abundance there, over the plumage of birds, than elsewhere. But the greater portion of the quadrupeds and birds of those climates preserve this white livery only during the winter season. There are, in fact, few quadrupeds that are constantly or wholly white, and the case is pretty nearly the same with birds. Most of them change their livery at the approach of summer. The species of *lagopus* are white in winter only, and even in that season they preserve their tail, composed of black quills.

The declaration cannot, therefore, be established, though made by some men of note, that the white peacocks are aboriginals of Sweden. Were it otherwise, it might be expected that these birds would still inhabit that country, or, at all events, that they once lived there in freedom. But we are without evidence of any such fact: while Linnæus states that the climate of Sweden is by no means suitable to the peacocks, and makes no exception in favour of the white variety. M. Temminck, also, assures us that even the white peacocks are more rare there than in the menageries of Holland.

Were any further evidence necessary, that of Sonnini would be conclusive. "The race of white peacocks," he says, "is not essentially original to the north; for in 1783 a pair of common peacocks produced, at Gentilli, near Paris, four young ones, two of which preserved the plumage of the parents, and two were entirely white." Nevertheless, Mauduyt, who relates this fact, observes that there was no white peacock in the village, nor in the environs. The same thing occurred, a few years before, on an estate equally near Paris. It thus appears that the whiteness of the plumage of the peacock is a simple accidental variety, which one cannot regard as forming a permanent race; and, still further, that these white peacocks are very rare.

Although the plumage of the white peacock is altogether of this colour, the long plumes of the train do yet retain, at their extremities, some vestiges of the brilliant mirrors peculiar to the species; and all the rest of their livery carries the impression of the different colours, though feebly sketched with a white more or less pure. The variety of the white peacocks always bear a higher price than the others. They are exceedingly handsome, and produce an admirable effect in the midst of a flock of richly-decorated peacocks.



THE CHINESE PEACOCK PHEASANT.*

The peacocks, properly so called, are valued, in all countries where they are known, for their beauty. Thus, they are great favourites in Persia, and are more common there than in England as an ornament in grounds and gardens. The King of Persia has a throne which is called "the throne of the peacock," from two representations of peacocks, which are placed on square pillars on each side of the seat. These sculptured birds are studded with precious stones, and each of them holds a large ruby in its beak. In China, beautiful fire-screens, and other ornamental articles, are made of peacocks' feathers, tastefully arranged, and mounted on ivory handles. Many Hindoo temples in the Dukhun have considerable flocks of peacocks. On comparison with the bird domesticated in Europe, the latter is found, both male and female, to be absolutely identical with the wild bird of India.

Solomon, doubtless, constituted the peacock one of the ornaments of his pleasure gardens. It was introduced into ancient Greece at a date far anterior to the time of Aristotle, who was born nearly four hundred years before the Christian era, that philosopher speaking of it as well known. It is also mentioned by Aristophanes, the celebrated comic poet of Greece, whose birth preceded that of Aristotle.

On the borders, if we may so speak, of the genus of peacocks, we find the bird of which the above is an accurate representation. The name given to it by Edwards sufficiently indicates its general character. This bird does not elevate its tail like the peacocks. It has neither the large dorsal plumes, nor the plumes of the tail, with which the peacock forms his wheel. Its tail is of a totally different form, not only from that of the peacock and the pheasant, but from that of all the Gallinæ. It is formed of two ranges or tiers of feathers, the upper range lying over the lower, which is the true tail. This bird differs again from the pheasant by having a broad and rounded tail, the feathers of which are not vaulted like those of the true pheasants; and also in its cheeks, which are not covered with a tissue of velvety red. The character of its having constantly several spurs also removes it from the peacocks and pheasants.

This beautiful form was raised to the rank of a genus by M. Temminck. Cuvier placed it among the peacocks properly so called; but other species have since been discovered, which, throwing further light on the modifications of form, well justify its genuine separation.

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[*] Edwards. Polyplectrum Bicalcaratum.—Temm. Diplectron.—Vieill.

THE PHEASANTS.

To adopt the words of Buffon: "It is sufficient to name the pheasant to remind us of the place of its origin. The pheasant, that is, the bird of the Phasis, was, it is said, exclusively confined to Colchis before the expedition of the Argonauts: those Greeks, ascending the Phasis, to arrive at Colchi, beheld these fine birds spread along the banks of the river, and by bringing them back to their own country, bestowed upon it a gift more precious than the golden fleece. At the present day, the pheasants of Colchis, or Mingulia, and some other of the neighbouring countries, are the finest and largest in the known world."

From these countries they have been extended in almost all the regions of the known world. They are found in the greater part of Europe; they are very abundant in Spain, in Italy, in some parts of Germany, particularly in Bohemia, and in the south of France. In the north they are less common. The common pheasant does not appear to inhabit Africa; but it is greatly multiplied in China, where it lives in the woods, without mixing with the other species, which are also equally abundant in this vast empire. Pallas describes pheasants as found in Siberia. They are very common among the Kirghis, who ornament their bonnets with the plumes of this bird.

THE COMMON PHEASANT.*

"Close by the borders of the fringed lake,
And on the oak's expanded bough, is seen,
What time the leaves the passing zephyrs shake.
And gently murmur through the sylvan scene,
The gaudy pheasant, rich with varying dyes,
That fade alternate. and alternate glow,
Receiving now his colours from the skies,
And now reflecting back the watery bow.
He flaps his wings, erects his spotted crest;
His flaming eyes dart forth a piercing ray;
He swells the lovely plumage of his breast,
And glares a wonder of the orient day.'

The generic character of the common pheasant has thus been given:—bill of mean length, strong; upper mandible convex, naked at the base, and with the tip bent downwards. Nostrils basal, lateral, covered with a cartilaginous scale; cheeks and region of the eyes destitute of feathers, and covered with verrucose red skin. Wings short, the first quills equally narrowed towards their tips, the fourth and fifth the longest. Tail long, regularly wedge-shaped, and composed of eighteen feathers. Feet, having three anterior toes united by a membrane as far as the first joint, and the hind toe articulated upon the tarsus, which in the male birds is furnished with a horny cone-shaped sharp spur.

Pheasants are fond of the shelter of thickets and woods, where the grass is long: yet, like partridges, they often breed also in clover fields. They form their nests on the ground, where from twelve to fifteen eggs are laid, smaller than those of the domestic hen. As in the mowing of clover near the woods frequented by pheasants the destruction of the eggs is sometimes very great, gamekeepers have had directions to hunt them from these fields as soon as they begin to lay, until their haunt is broken, and they retire into the corn.

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* Phasianus Colchicus.

The parent-birds and their brood, if undisturbed, remain in the stubbles and hedgerows for some time after the corn is ripe. If disturbed, they seek the woods, and only issue thence in the mornings and evenings to feed in the stubbles. They are fond of corn; but can procure a subsistence without it, since they often feed on acorns and on the wild berries of the woods.

> "See! from the brake the whirring pheasant springs,
> And mounts exulting on triumphant wings;
> Short is his joy; he feels the fiery wound,
> Flutters in blood, and panting beats the ground.
> Ah! what avail his glossy, varying dyes,
> His purple crest, and scarlet-circled eyes;
> The vivid green his shining plumes unfold,
> His painted wings and breast that flames with gold!" *

In confinement, the female pheasant neither lays so many eggs, nor hatches and rears her brood with so much care and vigilance, as in the fields out of the observation of man. Indeed she will very rarely dispose them in a nest, or sit upon them at all; and hence, in the business of incubation and rearing her young, the domestic hen has generally been substituted for the hen-pheasant.

It has been supposed by some that this bird is by no means remarkable for sagacity. Thus, it has been asserted that the pheasant imagines itself out of danger whenever its head only is concealed; and that on being roused from its usual state, it will often perch on a neighbouring tree, where its attention will be so fixed on the dogs, as to suffer the sportsman to approach very near. But there are sportsmen who can recount stratagems that they have known old cock-pheasants to adopt in thick and extensive coverts, when they have found themselves pursued, before they could be compelled to take wing, which prove that this bird is not deficient in contrivances for its own preservation.

As the cold weather draws on, the pheasants begin to fly at sunset into the branches of the oak-trees for roosting during the night. This they do more frequently as the winter advances, and the trees lose their foliage. At these times the male birds make a noise, which they repeat three or four times successively, called by sportsmen *cocketing*. The hens, on flying up, utter one shrill whistle, and then are silent.

Poachers avail themselves of these notes to discover the roosting-places, where, in woods that are not well watched, they have shot the birds with the greatest certainty. When woods have been well guarded, the poacher has adopted a different course: for, lighting a number of brimstone matches, the moment the sulphurous fumes reach the birds, they fall into his possession. But to this device his depredations are not limited. Fastening a snare of wire to the end of a long pole, by means of this he drags them, one by one, from the trees; and sometimes he entangles the birds as they run, in the morning or evening, into the adjacent fields to feed, by nooses made of wire, by twisted horsehair, and even by a brier set in the form of a noose, at the verge of a wood.

Where the country is favourable, it is easy to get up a head of pheasants, with the aid of good keepers; but it is more difficult to keep them at home, for they are wandering birds, and will often leave the place where they are bred, in search of food more agreeable to them, and localities more congenial to their habits. Warm coverts and water are absolutely necessary; and if they are plentifully supplied with agreeable food, only few of them will become vagrants. Jerusalem artichokes, potatoes, and buckwheat, as well as barley, are favourites with them. Small stacks of the latter grain in the straw are frequently placed about the preserves, and there the pheasants may be seen scratching at their feeding-time; but this mode of supply is objectionable, as the poacher sooner finds out the several spots which are attractive, and avails himself of them accordingly.

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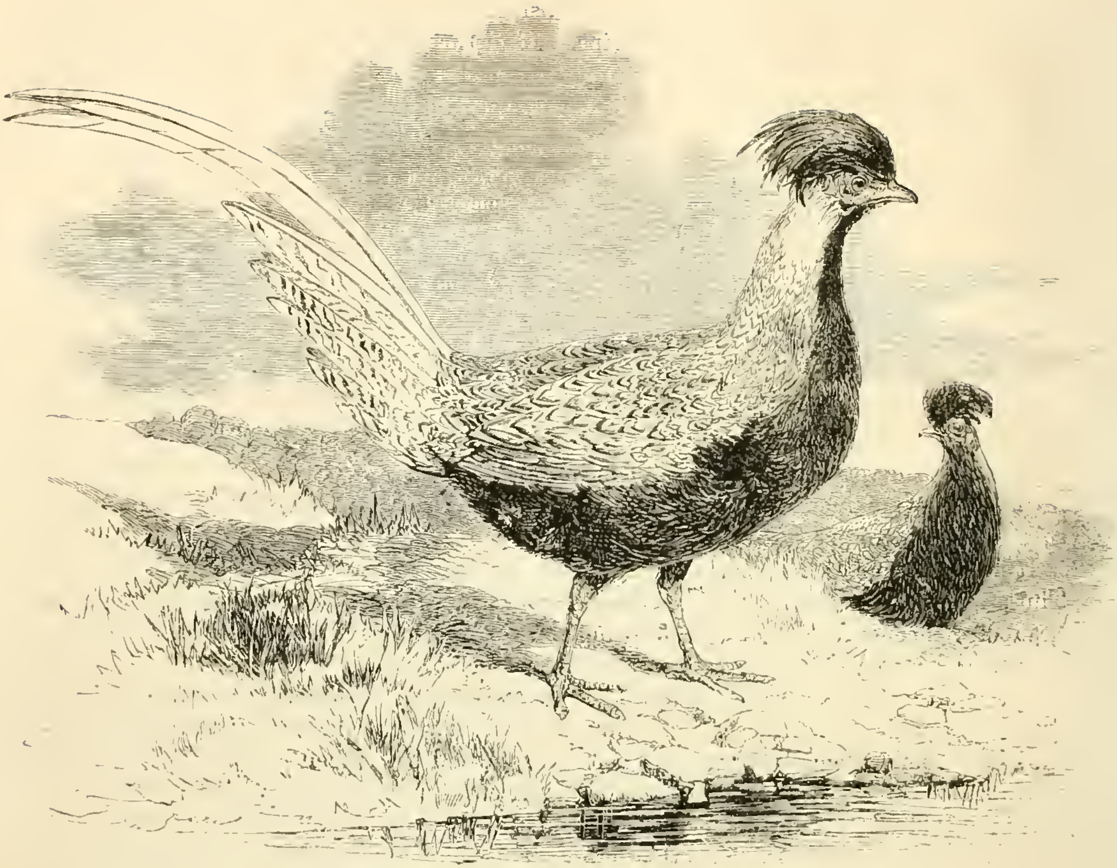
* Pope.



THE SILVER PHEASANT.*

The Silver Pheasant, both in external form and natural disposition, exhibits much analogy with the birds of the genus *Gallus*. It is easily tamed, and might be entirely domesticated. Its robust constitution accords more with that of the common fowl than that of the other pheasants. The form of its caudal plumes, and the mode of their insertion, also, present great analogies to the domestic cock.

The total length of the male bird is about two feet eight inches. Its cheeks are clothed with an apparently naked skin of a bright red colour, advancing forwards above the eyes so as to form a kind of crest, and terminating in a pendulous fold on each side of the lower mandible. The top of the head is ornamented by a tuft of long black feathers, which fall down over the upper part of the back of the neck. On the sides of the head and neck, the entire surface of the back and wings, and the upper part of the tail, the plumage is of a bright silvery white, traversed with the greatest regularity by an infinite number of finely pencilled black lines passing obliquely, in the form of chevrons, across the feathers. A striking contrast to this delicacy of tint is afforded by the uniform purplish black of the fore part of the neck, breast, and under surface of the body.

In the female the red of the cheeks is much less extensive; the top of the head has a kind of crest of a dusky brown; the neck, breast, and upper surface are of an earthy brown, and crossed by blackish bands; and the tail variegated with black, white, and brown.

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* Phasianus Nytheremus.—Linn.

These birds pair about the end of April. When the female has sufficient liberty, she attends very assiduously to her brood. The incubation lasts twenty-six days. The number of the eggs varies from eight to fourteen. Their colour is yellowish-red, often bordering on black, and they have small brown points.

This pheasant inhabits the northern regions of the vast empire of China. It has been transplanted into almost all the countries of Europe, where, with a little care, it thrives perfectly well. It is more easily tamed than the common pheasant, and its young ones are reared with less difficulty.

THE GOLDEN PHEASANT.*

The Golden Pheasant is derived from China. Its name there is said by Latham to be .' Kinki," or " Kinker," which signifies " Golden-flower Fowl." It is a favourite in that country, as may be seen by its frequent occurrence in Chinese paintings.

In this country this bird has hitherto been preserved only in aviaries, where it is shielded from the cold of winter and supplied with food. In captivity it breeds freely. It is one of a race remarkable for beauty.

The golden pheasant is much smaller than the common one. The length of the male is about three feet, of which the tail measures twenty-three inches. The head is ornamented with a beautiful silky crest, of a fine amber-yellow. The feathers of the back of the head and neck are of a rich orange-red, edged with a line of black, and capable of being raised at will. Lower down, so as to lie on the top of the back, the feathers are glossy greenish-black. The back is rich yellow; the wings deep blue at their base, the under surface intense scarlet.

It is chiefly the want of the comb, the peculiar covering of the cheeks, and the remarkable form of the tail, that distinguish the present group from the genus *Gallus*, comprehending the numerous species and varieties of domesticated fowls. From this hardy race the pheasants differ still more in constitution and habits than in external characters, seldom breeding in captivity, unless under the most favourable circumstances, and manifesting an excessive sensibility to the impressions of a variable atmosphere and the influence of a northern climate. The usual attitudes of the birds are extremely different: the cock elevating his head to the full stretch of his neck, with a haughty and independent air; while the pheasant projects it forwards in an almost horizontal position, scarcely raising it above the level of his body.

In the female, as is usual in this tribe of birds, the colours are far less splendid than those of the male. The upper parts are of a rusty-brown, varying in intensity; the under surface is marked with spots of a deep brown on a lighter ground; the throat is nearly white; the wings are transversely barred with black; and the tail, which is considerably shorter than that of the male, is variegated like the wings.

Much of the difficulty, as well as much of the tenderness of constitution, manifested by these birds is attributed by M. Temminck to the close confinement in which they are usually kept, and to the very precautions which are taken to preserve them from the effects of cold. He advises that they should be gradually habituated, like the more common race, to the large pheasantries in which the latter are preserved, and doubts not that, as they multiplied under such circumstances, they would become more and more hardy, until at last they would be fully capable of supporting the cold of our northern winters. The experiment, he tells us, has already been made in Germany, where they have been kept at perfect liberty in an open pheasantry, in company with the common species, and suffered no greater inconvenience than the latter from the change of seasons.

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* Phasianus Pictus. Linn.

REEVES' PHEASANT.*

This elegant species closely resembles, in its manner, the common pheasant. It is described by Temminck under the name of *Phasianus Veneratus.* The upper surface generally is of a golden yellow, each feather having a distinct margin of black ; the head white, the naked space around the eye scarlet ; a black streak passes over the ear-coverts to the back of the head ; the throat is white, bounded by a gorget of black ; the feathers of the sides are white in the centre, with barb-shaped marks of black, and a deep red-brown border ; the middle, under surface, and the thighs are black ; the tail-feathers are silvery, gray down the middle, merging into yellowish brown at the sides, and barred with broad bands of black tinged at their edges with brown.

When Dr. Latham wrote his "History of Birds," he alludes to an account, in Marco Polo's travels, of a pheasant from the "kingdom of Arguill, on the west side of Tartary," with "tayles of eygth, nine, and tenne spannes long." But that eminent naturalist had, at the time, only seen drawings of this species, and specimens of the tail-feathers which he suspected to belong to it. Nor had any living example of this magnificent bird reached Europe, till one was brought over from Canton, by J. Reeves, Esq. The bird is somewhat larger than the common pheasant. The two middle tail-feathers, when fully grown, are from five to seven feet in length.

THE IMPEYAN PHEASANT.†

Extreme brilliancy of plumage is generally the characteristic of birds dwelling in torrid regions beneath a glowing sky ; but such is not the case as regards the most gorgeous and beautiful of the pheasant tribe. The high mountains of the Himalaya, bordering on the limits of perpetual snow, are tenanted by the most splendid birds of this family.

The Impeyan Pheasant is an example in point. Adapted to regions where the temperature at the most is only moderate, and often at a low degree, this noble bird soon dies when taken from its Alpine home into the burning lowlands of India. Hence the attempts that have been made to bring it alive into England have hitherto failed.

THE HORNED PHEASANTS.‡

In addition to the Impeyan pheasant, the Himalaya chain of mountains has a group or genus of the *Phasianidæ*, containing a very limited number of species, remarkable not only for their great beauty, but their peculiar character. This indicates an affinity to the turkeys, between which group and that of the genuine pheasants these birds constitute an intermediate link.

The male birds of this genus are easily distinguishable from the rest by their large throat-wattles, which extend from the naked cheeks, spread over the throat, and proceed down each side of the neck ; while from behind each eye there is a soft fleshy horn. These appendages are capable of contraction and dilation, under the emotions of fear or anger. The tints of the horns and wattles are rich purple, mingled with scarlet, and are most probably changeable from one hue to another. The tail is broad and rounded, and the plumage is dotted with round spots of white on a brown or red ground, which gives a very pleasing effect.

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* P. Reevesii.

† Lophophorus Impeyanus.

‡ Tragopan.

TRAGOPAN HASTINGSII.

One of the three species known, thus named, is from the northern range of the Himalaya, and was first illustrated in the "Century of Birds," from that country, by Mr. Gould. Its total length is twenty-three inches. The head of the adult male is covered with a pendent crest of feathers, which together with the ear-coverts and the throat are black; the neck and shoulders are rich maroon; the chest fine orange-red; the marked skin round the eyes is scarlet; the wattles and horns are purple, with a scarlet tint here and there. The upper parts exhibit a mixture of zigzag lines, and marks of dark and light brown, forming a ground in which are scattered numerous distinct spots of white. The feathers of the under surface are maroon, bordered with black, each having a large central spot of white. The young male is less brilliant, and the wattles are but little developed.

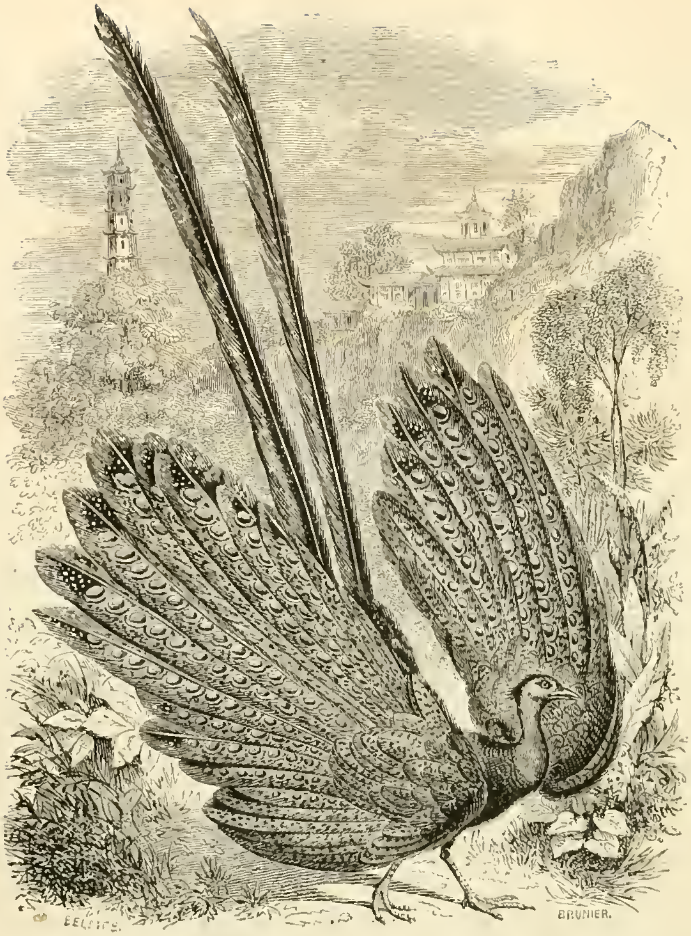
The plumage of the female consists of an uniform brown; barred, and dashed irregularly with dark brown and dull fawn colour; the cheeks are clothed with feathers, and the head is slightly crested. There are neither horns nor wattles.

TRAGOPAN SATYRUS.

This is the horned pheasant of Nepâl. It was first described by Edwards, not far short of a century ago. The alliance of this bird to the turkey was noticed by this writer, who, in his catalogue, places it among that group, while, in his account of it, he observes, " for shape of body, and proportion of parts, it is pretty much like a turkey, and may be ranged with fowls of the poultry kind." Dr. Latham states, that these birds, though by no means common, are not unfrequent in drawings done in India. Its size is between that of a fowl and a turkey.

TRAGOPAN TEMMINCKII.

This species is from Thibet and the Chinese borders, and was first described and figured in Gray's " Indian Zoology."



THE ARGUS PHEASANT.*

Of all the *Gallinæ,* there are none whose wings are so little adapted for flight as those of the Argus. The secondary quills of the male are, in fact, three times longer than the primary, which spread out broadly at their extremities, and altogether form a large, sweeping, fan-like plume. Each of these feathers is beautifully ornamented with a row of eyes, down the web on the outer side of the shaft, and the rest of this vane is filled with lineal and oval spots of deep brown on a yellowish gray ground. Their stems are extremely weak, and they have no coverts. If we add to this the weight of the bird, and its broad tail, in the centre of which are implanted two great and broad feathers, which exceed the others by many feet, it will appear that the argus is not only unique, but the only bird in which so remarkable a disproportion takes place.

The argus runs more than it flies, and its legs being very long, render it well adapted for this motion. It is also assisted therein by the use of its wings. It does indeed sometimes rise from the ground, but its flight is short and heavy.

This bird inhabits Sumatra, and is equally found in the south of India. It is also said to have been observed in Chinese Tartary. It appears to be a bird of recluse habits, frequenting wooded mountains, and places remote from human habitations. In size it is little inferior to a turkey. Its voice is described as rather plaintive.

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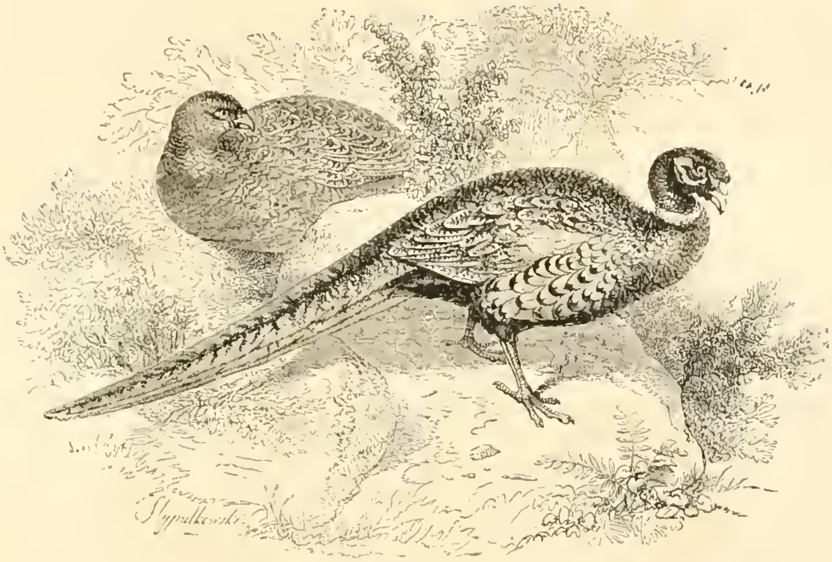
* Argus Giganteus.



THE RING-NECKED PHEASANT.*

The Ring-pheasants are common in the woods of many parts of China. They are frequent in India, where they are smaller than the common pheasant. They are also found about the Caspian Sea, on the southern part of the desert between the Don and the Volga, in Great Tartary.

It is long since this bird was brought from China into Europe. Its size is always less, the expanse of its wings smaller, and its tail shorter, when it is compared with the common pheasant. The upper part of its head is tawny, with a gloss of green, two white dashes surmount the eyes, and the rest of the head and neck are of a deep and brilliant green, with a violet reflexion, except where the white collar, which gives its name to the species, passes round the neck.

The feathers of the back are black in the middle, surrounded by a zig-zag whitish band, and tipped by a black arrow-shaped spot; those of the shoulders are black at the base, marked in the centre by a whitish pupil surrounded by a black ring, and chestnut with somewhat of a purplish gloss towards their tips. The tail-coverts are light-green with loose silky barbs; the breast of a brilliant reddish purple; the sides pale-yellow; the under parts and thighs black, with a gloss of violet; and the tail-feathers olive-green in the middle, with broad black transverse bands.

M. Temminck considers the ring-necked pheasant of China not as a variety of the common species, but as one that is distinct. In its native country this bird never unites with the common pheasant. There is a constant and marked dissimilarity between the plumage of these two birds. Their manners are dissimilar, and their eggs of a different colour.

In the female there is a narrow band of short black feathers beneath each eye, which distinguishes her from the common pheasant, from which she differs besides in the want of the black spots on the breast, and the greater intensity of the transverse black bars upon her tail.

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* Phasianus Torquatus.

THE VARIEGATED PHEASANT.

This bird is only an accidental variety, which differs in its plumage from the common kind. This may be owing to some alteration in the juices which minister to the development of the feathers. White is the predominant colour, marked in various parts with the other hues of the plumage of the common pheasant.

Such singular varieties in the plumage of the pheasant are partly attributable to domestication. Even in such circumstances they are rarely multiplied, and examples of this kind are not common among the wild species.

It is said by gamekeepers, that individuals with this variegated plumage preserve it only for a few years, and then resume the brilliant colours peculiar to the species. If this be true, it proves that the variation in question is owing to some vice in the constitution of the birds. It is, however, certain that similar changes take place in many species of birds. Instances have been known of sparrows, finches, and larks, which were white or whitish at first, and after a few moultings recovered their natural plumage.

It is possible that extreme age may cause this degradation; but, even then, its proximate cause appears to be some irregularity in the moulting. In all other cases, it appears to be the result of accident, always excepting those northern birds which turn white in winter.

THE WHITE PHEASANT.

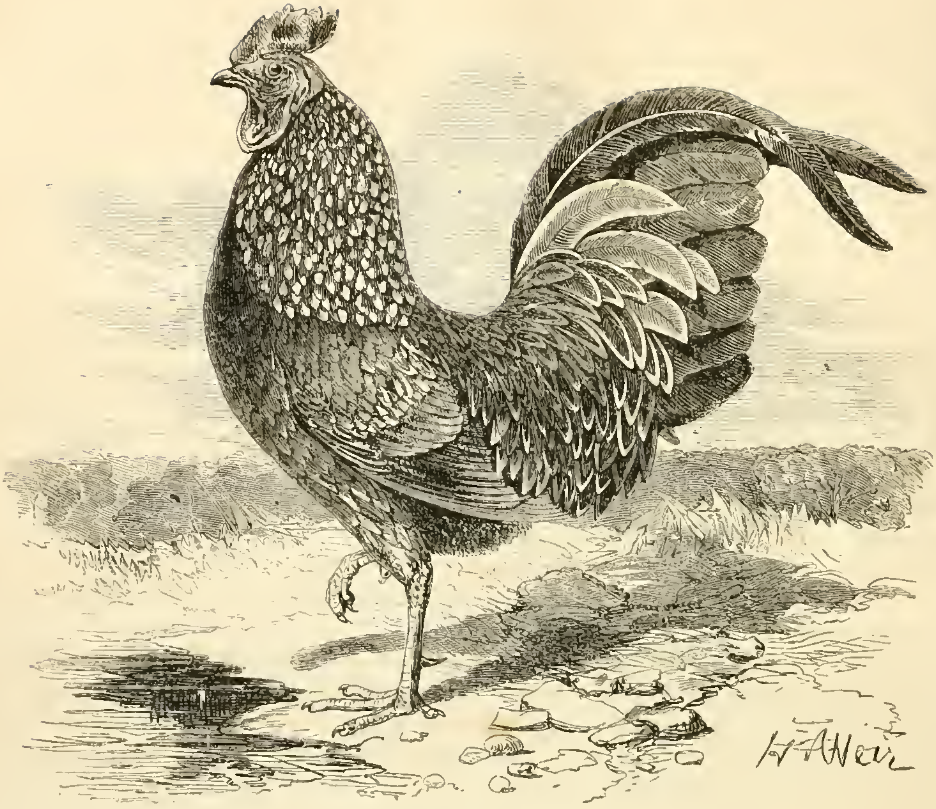
This bird, reminding us of the white peacock, is a variety in which white is wholly prevalent, but by no means pure. Like that of the bird just mentioned, the plumage bears the impressions of the colours proper to the species, but very slightly sketched. Moreover, few individuals are found to have the entire body covered with white feathers. Some plumes richly decorated are to be found here and there. Latham says that there are a few black spots about the neck, and some rufous ones on the scapulars.

Such, then, is a brief sketch of this interesting and beautiful family of the *Gallinæ*. The precedence must be assigned, as to form and colour, to the Argus pheasant. "No language," says Cuvier, "could represent the various tints, and demi-tints, and shades that prevail throughout its plumage. It would seem as if Nature, after having lavished, and, as it were, exhausted, all her brilliancy of colouring on so many birds, had taken a pleasure in assembling upon this every variety of her soberer hues; unsatisfied with having charmed our sight with the resplendency of purple, gold, and azure, in the peacock, the bird of paradise, and the humming-bird, she appears desirous of revealing to us all the resources of her art, by producing the most elegant and harmonious shades even from the refuse of her inimitable pallet."

In a state of captivity, the young pheasants require much care. The most critical period for these birds is when the tail begins to shoot. It is necessary that the troops of young game should be sufficiently removed from each other, to prevent their ages from being confounded. The neighbourhood of those which are strong is dangerous to the feeble. In the greater part of the space appropriated to them there should be plenty of grass, and a sufficient number of small, thick-tufted bushes, that each group of birds may have one within reach: this is a matter of indispensable necessity.

Pheasants lay towards the end of April; it is then necessary to collect the eggs every evening, for otherwise they would be often broken or devoured by the hens themselves. To procure them with greater facility, it is necessary to feed a certain number of hens all the year round. Seven of these are shut up with a cock, in separate inclosures, which are covered with a net. The separation between two of these enclosures should be sufficiently thick to prevent the pheasants in one seeing those in another; if the cocks saw each other, a spirit of rivalry would take place, which would be injurious to the increase of the birds. The pheasants should receive nourishing and stimulating food, which hastens the period of reproduction; but they should not be fattened, as this is dangerous. The hens which are too fat do not lay so many eggs, and the shell of the eggs is so soft, that there is a risk of their being broken in incubation. The enclosures should have a southern aspect, and be defended on the northern side by a wood or high wall.

Could the horned pheasants, or the refulgent Impeyan pheasants, be imported in sufficient numbers into England, there is little doubt but that they might, with proper management, become naturalised. No fear need be entertained with regard to cold. As they are the natives of a cold or temperate region, the wooded hills which might be found for them, would not be very uncongenial to their constitution. Nor would there be any difficulty in providing them with suitable food. Grain forms the staple diet of all the gallinaceous tribe; hence so many of them have become domesticated, of which the birds we have now to consider present a striking example.



THE JUNGLE FOWL.*

The restricted genus *Gallus* is one of peculiar importance. The head of the birds constituting it is generally surmounted by a fleshy vertical crest, the base of the lower mandible furnished with two flattened wattles, and the tail-feathers, fourteen in number, rising in two almost upright planes, with ample coverts in the male sex. Here we find our domestic cock and hen.†

Many fanciful and superstitious feelings are still retained regarding the domestic cock, and his nocturnal crowing; and even his more familiar morning salutation is supposed by the ignorant to dispel all spirits, "whether on sea or fire, in earth or air."

> "Some say that ever 'gainst that season comes
> Wherein our Saviour's birth is celebrate,
> The bird of dawning singeth all day long;
> And then, they say, no spirit walks abroad;
> The nights are wholesome; then no planets strike;
> No fairy takes, no witch hath power to charm;
> So hallowed and so gracious is the time"

Of the numerous benefits which the Divine goodness has enabled us to derive from the wide circle of the feathered tribes, there is probably none which surpasses, either in extent or utility, the domestication of these most familiar birds. So long, however, have they been subservient to the subsistence and comfort of our race, that no authentic tradition remains of their introduction to any of the more ancient kingdoms of the earth. They may, therefore, be regarded as one of those particular and providential gifts which, at an early period of the world, was bestowed on the human family, and has since, like the faithful and accommodating dog, attended it in its wonderful and far-spread migrations.

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* Gallus Giganteus. Temm.

† Gallus domesticus.

It has been supposed, indeed, that our different races of domestic poultry were originally derived from Persia, from the circumstance of Aristophanes calling the cock "the Persian bird." But that this is erroneous is evident from the fact, that all modern researches have failed to discover any birds of the genus *Gallus* in that country. If, however, it is merely meant that the Greeks, during their intercourse with the Persian nation, may have obtained from that people a breed previously domesticated, then there is reason for such an idea, poultry being known to have existed in Persia, in a domestic state, from a very remote antiquity.

No doubt can be entertained that these birds were well known over many parts of Europe and Asia for several hundred years before the Christian era. When Themistocles took the field to combat the Persians, he saw, it is said, two cocks fighting against each other; and hence he alluded, while haranguing his troops, to the invincible courage of these birds. "Observe," he said of the cock, "with what intrepid valour he fights, inspired by no other motive than the love of victory; whereas you have to contend for your religion and your liberty, for your wives and children, and for the tombs of your ancestors." Nor was this appeal uttered in vain: the Athenians achieved on this occasion one of the most memorable victories emblazoned on their annals. Themistocles died about the 449th year preceding the Christian era, and must consequently have been the contemporary of Nehemiah.

A mode of divination was practised by the ancient Greeks with these birds. The letters of the alphabet were written in a circle; a grain of wheat or barley was laid upon each letter; and a cock, consecrated or provided for the occasion, was placed within the circle. The required information was obtained by putting together those letters off which the cock picked the grains of corn. To obtain a fuller account, they laid grains of corn upon the letters a second time, and repeated the process.

Pliny thus speaks of the domestic cock: "After the peacock, the birds which are most sensible to glory are those active sentinels which nature has produced to rouse us from our matin slumbers, and send us to our daily occupations. They are acquainted with the stars, and every three hours they indicate by their crowing the different periods of the day. They retire to repose with the setting-sun, and from the fourth military watch they recall us loudly to our cares and labours. They do not suffer the day-beam to surprise us without timely warning. Their crowing announces the hour of morning, and the crowing itself is announced by the clapping of their wings. Each farm-yard has its peculiar king; and amongst these monarchs, as amongst the princes of our own race, empire is the meed of victory.

"They appear to comprehend the design of those weapons with which the feet are armed. It is not uncommon for two rivals to perish in the combat. If one be conqueror, he immediately sings forth his triumph, and proclaims his own superiority; the other retreats and disappears, ashamed of his defeat. The gait of the cock is proud and commanding; he walks with head erect and elevated crest. Alone of all birds, he habitually looks up to the sky, raising at the same time his curved and scythe-formed tail, and inspiring terror in the lion himself, that most intrepid of animals.

"Some of these birds seem actually born for nothing but warfare and battles; some have rendered the countries which produced them famous, such as Rhodes and Tanagra. The second rank is assigned to those from Melos and Chalcis—birds truly worthy of the homage they receive from the Roman people. Their repasts are solemn presages; they regulate daily the conduct of our magistrates, and open or close to them their own houses. They prescribe repose or movement to the Roman fasces; they command or prohibit battles, they have announced all the victories gained throughout the universe; in a word, they lord it over the masters of the world. Their very entrails and fibres are not less agreeable to the gods than the richest victims. Their prolonged notes in the evening, and at extraordinary hours, constitute presages. By crowing all night long, they announced to the Bœotians a celebrated victory over the Lacedemonians; thus did the diviners interpret it, because this bird never crows when he is conquered."

It is remarkable that the practice of cock-fighting has prevailed among people widely separated. Thus Captain Cook discovered it in his first visit to the South Sea Islands. The Rev. W. Ellis describes the *Faa-ti-to-raa-moa*, or literally, the causing fighting among fowls, as the most ancient game among the Tahitians. He states that, according to the tradition of the natives, poultry have existed in the island as long as people; that they either came with the first colonists, or were produced by Taaroa contemporaneously with men.

But long before the first foreign vessel was seen off the shores of the islands of Polynesia, the natives were in the habit of training and fighting cocks. Unlike those who, in later times, have practised among us the barbarous and cruel sport, they never trimmed the flowing plumes of the birds, but were proud in beholding the beautiful and gorgeous combatants, with ample natural wings, full-feathered necks, and lengthened tails. Neither were the birds urged to combat as they have been by those who regarded themselves as not merely civilised, but refined; for as soon as one bird *avoided* another, he was considered as *ri*, or beaten, and victory was declared in favour of his antagonist.

According to M. Temminck, our domestic cock seems to have originated from the Jago Cock,* a very large wild species, which inhabits the Island of Sumatra, and from the species *Bankiva*, another primitive cock, found in the forests of Java. For this opinion the following reasons have been assigned: the resemblance of their females to our domestic hens; the size of our village cock, which is intermediate between that of the Jago and Bankiva; the nature of the feathers, and the forms and distribution of the barbs, which are absolutely the same as in the domestic cock; and because it is in those two species alone that the females are provided with a crest and small barbles, characters which are not found in any other of the primitive species which are known.

The Malay Gigantic Fowl is a native of Java and Sumatra. In its natural attitude, the male bird is more than two feet in height, measuring from the top of the head to the ground. It has a comb, which is thick, low, and without serrations, appearing as if it had been partially cut off; the wattles are small; and the throat is bare. Elongated feathers, or hackles, of a pale golden-reddish colour, cover the neck, and advance upon the back; while others, of the same kind and hue, cover the rump, and drop on each side of the base of the tail. The feathers of the middle of the back and the shoulders of the wings, which are of a loose texture, are of a dark chestnut. The greater wing-coverts, like the tail-feathers, are of a glossy green. The limbs are remarkably stout. The tarsi are of a yellow colour. The voice of this bird differs greatly from the clarion-peal of our domestic fowl, for it is a sort of hoarse and short crow.

In some parts of continental India this bird is domesticated, and is known to Europeans as the Kulm Cock. Colonel Sykes supposes that it is not a native of that country, but that it was introduced by the Mussulmans from Java or Sumatra. Two cocks and a hen were brought by that gentleman into England, in June, 1831. They bore the winter well, the hen laid freely, and soon reared two broods of chickens. The hen was one-third smaller than the male. The cock has the habit, when tired, of resting on the first joint of the leg. Other specimens of this gigantic race have been brought into this country.

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* Gallus Giganteus.

The Javanese Jungle-fowl* shows by its name from whence it is derived. It is about the size of an ordinary bantam, and resembles, in its plumage, the black-breasted red game-bird of Britain, with a mark of steel-blue across the wings. It has a high comb, with a deeply serrated edge, and the wattles are rather large. The long hackle feathers of the neck and rump are of a glossy orange colour; the shoulders are of a chestnut-red; the greater wing-coverts of a dark steel-blue; the quill-feathers of a brownish-black, edged with pale reddish-yellow; and the black tail has metallic reflexions of green and blue. The under parts are black. The naked space round the eyes, the wattles, and the comb, are scarlet. The hen is very much smaller than a brown hen, though between the two there is a strong resemblance. These birds interbreed with our common poultry, and the progeny is fertile.

The Common Jungle-fowl of continental India, called Sonnerat's Jungle-fowl,† inhabits the woods; it exceeds in size the Bankiva jungle-fowl, and is very beautiful both in symmetry and plumage. The Mussulman natives of India, who eagerly engage in the barbarous sport of cock-fighting, highly prize this bird for its great courage and determination. It is, however, easily domesticated.

According to Colonel Sykes, this bird is very abundant in the woods of the western Ghauts, where there are either two species or two very strongly marked varieties. In the valleys, about 2,000 feet above the sea, Sonnerat's species is found, standing high on the legs, and with the yellow cartilaginous spots on the feathers, even in the female.

In the belts of woods on the sides of the mountains, at the elevation of 4,000 feet above the sea, there is a short-legged variety; the male has a great deal of red in his plumage, which Sonnerat's has not; the female is of a reddish-brown colour, and is without cartilaginous spots at all. Colonel Sykes shot a hen upon her nest, in which were only three eggs, and the process of incubation had evidently commenced some days.

This is indeed a splendid species. The comb of the male is large, and has its margin serrated; the wattles are rather ample; the hackles of the neck and lower part of the back, and the wing-coverts on the shoulders, have the shafts expanded into a thin horny plate, of a bright golden-yellow, with a rich metallic gloss. These plates vary in shape, being in some feathers angular, and in others oval, or almost circular. The plumage on the middle of the back, the breast, and under parts generally, is a deep gray, each feather having a paler margin. The tail is of deep, rich, glossy green, with varied metallic reflexions; the bill and legs yellow. The females are smaller than the males, of a rich brown colour, beautifully speckled and marbled with darker pencillings. Neither combs nor wattles are very apparent.

To these birds Captain Skinner, in his "Excursions in India," alludes when he says: "In some parts of the forest we saw several jungle-fowl; they have the same habits as the domestic poultry; the cock struts at the head of his hens, and keeps a strict watch over their safety. Whenever they were disturbed by our attempts upon them, he flew to the highest branch of some tree beyond our reach, and crowed with all his might, while his dames ran into holes and corners to escape our attacks; they were so cunning, that we found it impossible to get within shot of them, with all the caution we could use."

It appears, however, that a greater degree of caution may ensure success. For if the sportsman will ascertain from successive cries the way the birds walk, and then hurry through the cover, by a circuitous route, so as to intercept them, he will not be likely to fail. Still, no little tact is necessary; for the slightest stir is sufficient to discover the sportsman; if this be done, the crowing ceases, and they are off at a hopeless rate.

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* Gallus Bankiva.

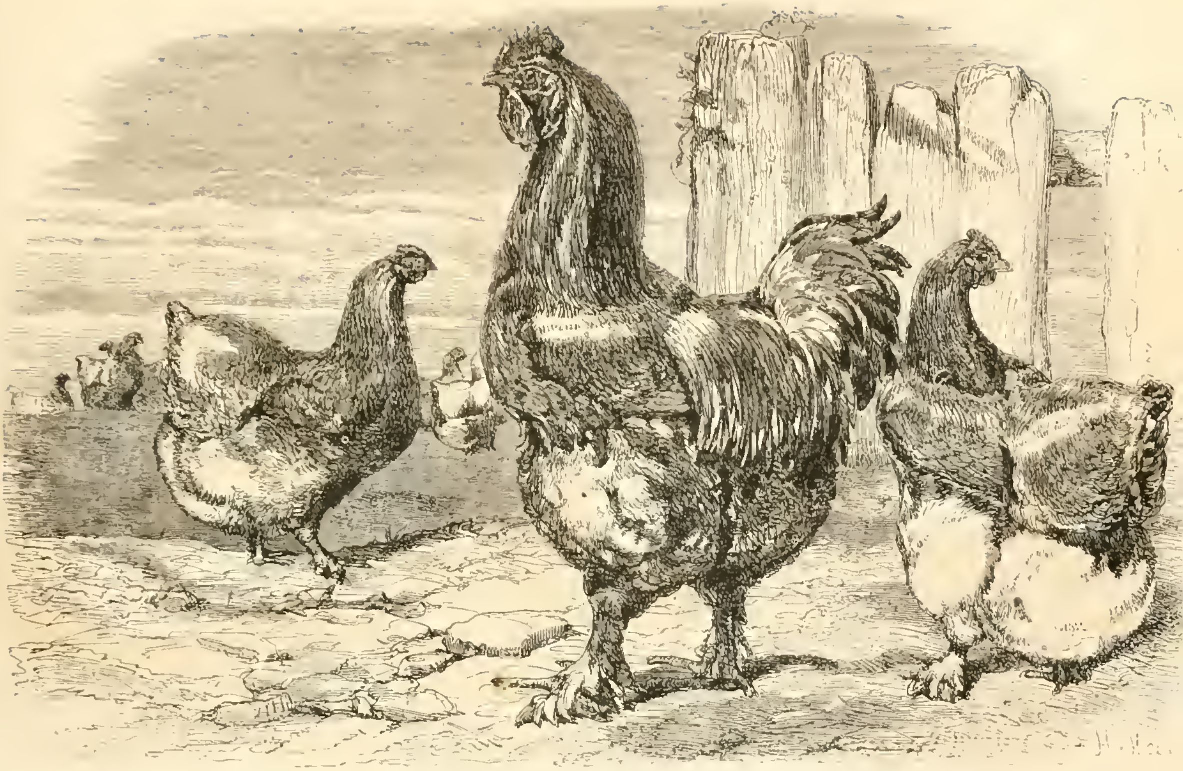
† Gallus Sonneratii.

WHITE COCHIN CHINA FOWLS.

The Domestic Cock is that bird over which, above all others, man has acquired the most ample dominion. This conquest was not, however, achieved without difficulty. In no work of antiquity do we meet with the slightest indication of the migration of these birds; nor is it probable that, heavy as they are, and with wings and tails so constructed as to have no facility for a flight of long duration, or for traversing the seas, they should have been able to transport themselves from countries far remote. Man must, therefore, have brought them into the different countries where those species exist at the present day. They are now propagated through every country of the globe.

The birds represented in the annexed engravings, are a Chinese breed, and are kept in great numbers at Shanghai. Some of these fowls are quite white, and others quite black; and they have the same peculiarity of form. The white, with feathered legs, are the most valuable. One pen of these birds, consisting of a cock and three hens, were sold at the Birmingham poultry show, in 1852, for fifty pounds. The price for ordinary fowls of this breed varies from ten shillings to five pounds each. The real Cochin China fowls are said to be small and elegantly shaped.

The first Shanghai fowls brought into England are said to have been a present to Her Majesty from India; but the eggs having been freely distributed, the breed may now be easily obtained. These birds appear to be a hardy race. A pair of Cochin China fowls, sent by Her Majesty to the Dublin Cattle Show, in April, 1846, created a great sensation, from their immense size and weight, and the full deep tone of the crowing of the cock. So great was the desire to possess the breed, that enormous prices were given for the eggs and chickens. At Handsworth, near Birmingham, large numbers are kept by G. C. Adkin, Esq., an amateur in fancy poultry; and in the poultry-yard of that gentleman they have all the habits of our barn-door fowls.



BLACK COCHIN CHINA FOWLS.

In England many different breeds of fowls are distinguished and prized by amateurs, and many counties have long been celebrated for the size and excellence of their poultry, of which Surrey and Sussex are examples. The Sussex fowls are of large size and fine flavour, but inclined to be long in the body. The breed around Dorking, in Surrey, is of great antiquity, and supposed by some to have been introduced by the Romans.

A pure Dorking fowl is of large size and rounded contour, and furnished with one or more additional, but imperfect, toes; the legs are short, and the plumage white. The breed, of late years, has been much crossed with the common dunghill fowl, and with the Sussex race, but without any deterioration. The flesh is remarkably white and delicate in flavour. They are not easily obtained in the place to which they have aided in giving celebrity; but vast numbers of them are regularly sent to the London markets.

A brood of fowls, called the Spanish, is often seen around London. They are of a very large size, and the hens lay enormous eggs, but they do not sit well. The plumage is black, the comb large and often pendulous, and the naked skin behind the ears white.

The black Poland or Hamburg breed have a large top-knot of long white feathers. The gold-spangled and silver-spangled Polands are remarkable for their beauty of plumage. These have small combs on the forehead, and a full top-knot of feathers on the crown. Fine fowls of these breeds are highly valued.

The rumpless fowl, in which not only are the tail-feathers wanting, but the tail itself, is said to be derived from Persia. These birds are not pleasing in appearance, but they lay well. The Friesland breed, remarkable for having all the feathers frizzled or curled up the wrong way, are very unsightly. These fowls are found in the Deccan, in Java, and in Sumatra, as well as in Europe.

The game cock, which is probably a native of India, though for many centuries established in England, has an unusual length of spur, his natural weapon of combat. The flesh of this variety is delicately white, and of the finest flavour; the plumage is brilliant, and the form symmetrical; but from their pugnacious temper, there is great difficulty in rearing even those of the same brood.

Buffon describes a curious scene, of which he was a witness. A sparrow-hawk alighted in a populous court-yard, when a young cock, of that year's hatching, instantly darted at him, and threw the foe on his back. In this situation the hawk defended himself with his talons and his bill, intimidating the hens and turkeys, which screamed tumultuously around him. When he had slightly recovered, he rose, and was taking wing; when the cock rushed on him a second time, overturned him again, and held him down so long, that he was caught.

Some mowers near Berwick cut a partridge on her nest, and immediately brought the eggs, fourteen in number, to the house of the gentleman on whose land they were employed. He ordered them to be put under a very large and beautiful hen, and her own to be taken away. They were hatched in two days, and the hen brought them up perfectly well, till they were five or six weeks old. During that time they were constantly kept confined in an outhouse, without being seen by any of the other poultry. But one day, the door happening to be left open, the cock got in. The housekeeper, hearing the cries of the hen in distress, ran to her assistance, but did not arrive in time to save her life. The cock, finding her with a strange brood, fell on her, though she had been his greatest favourite, and killed her on the spot. Although, when found by the housekeeper, she was fluttering in the last agony, she found him tearing her both with his beak and his spurs.

The patience and perseverance of the hen while hatching are truly extraordinary. She covers her eggs with her wings, fostering them with a genial warmth, often turning them, and changing their situation, that all their parts may receive an equal degree of warmth. So intent is she on her task, as to neglect, in some degree, even the ordinary supplies of food and drink. In about three weeks, the young brood burst from their confinement, when, from being one of the most cowardly and voracious, she becomes the most daring and abstemious of all animals. If she casts her eyes on a grain of corn, or even a crumb of bread, she will not touch it, but gives her numerous train immediate notice of her success by a peculiar call, which they all understand. Instantly they flock around her, and the precious morsel is divided among them. Though by nature timid, and apt to fly from the smallest assailant, yet, when marching at the head of her brood, she is fearless of danger, and will fly in the face of the fiercest animal which offers to annoy her.

Mr. Jesse says: "I am always sorry to see the anxiety and misery of a hen who has hatched ducks instead of her natural progeny. When they take to the water she is in a perfect agony, running round the brink of the pond, and sometimes flying into it, in hopes of rescuing her brood from the danger she apprehends them to be in. A friend of mine observed a remarkable instance of the degree to which this natural apprehension for her brood may be overcome in the hen by the habit of nursing ducks. A hen who had reared three broods of ducks in three successive years, became habituated to their taking to the water, and would fly to a large stone in the middle of a pond, and patiently and quietly watch her brood as they swam about it. The fourth year she hatched her own eggs, and finding that her chickens did not take to the water, she flew to the stone in the pond, and called to them with the utmost eagerness."

The possibility of the existence of wild cocks in America has sometimes been denied. But it should not be said that, since these birds inhabit India, China, and the Islands of the Eastern Archipelago, in a state of freedom, it cannot follow that America possesses none of them in the same state; for facts to the contrary may easily be cited.

M. Sonnini thus expresses himself on the subject: "Travelling in the sombre and solitary forests of Guiana, when the dawn first began to shed a less lugubrious tint, in the midst of those immense trees which never fall but beneath the axe of time, I have frequently heard a cry perfectly resembling the note of our domestic cock, but less powerful and sonorous. The considerable distance from all inhabited places could not permit us to believe that this crowing, which the companions of my journey heard very distinctly, was produced by domestic birds, and the Indians by whom we were followed told us that it was the cry of wild cocks. In one of these journeys, I myself beheld on a mountain a bird about the size of a pigeon, with brown plumage, bearing on its head a fleshy crest, having the wings short, and the tail arranged exactly like that of the hen, whose port and gait it altogether exhibited. I was able to examine it very well, and it did not appear very wild or shy; the negro who had carried my fusee had stopped at some distance, and when he rejoined me the bird was flown into the depth of the forest, and we searched for it to no purpose.

"This fact, the crowing of the cocks which we heard in the woods, and the knowledge of the wild cocks possessed by the natives, left no doubt on my mind respecting the existence of these cocks in South America; and I have now put forth what I had the opportunity of ascertaining, without any other pretensions than to make known a mere fact in the natural history of the *Gallinæ*."

THE CAPERCAILLIE.

THE CAPERCAILLIE.*

The name thus given to the Wood Grouse is of Gallic origin, and literally means the horse of the wood. This bird is supposed to have been an inhabitant of the British isles within the last century. It is still to be found in most parts of the Scandinavian peninsula;—indeed, as far to the north as the pine-tree flourishes, which is very near to the North Cape itself. It is, however, more scarce in the more southern of the Swedish provinces.

Its favourite haunts are extensive fir-woods. In coppices, or small cover, it is seldom or never found. The birds which breed in the larger forests remain there all the year round; but those, on the contrary, which breed on elevated mountains, the summits of which are destitute of trees, or in a more open part of the country, in the event of deep snow, usually fall down to the lower grounds.

The principal food of the capercali, in its natural state, consists of the leaves of the Scotch fir. It also eats juniper-berries, cranberries, blueberries, and other berries common to the northern forests; and occasionally also, in the winter time, the buds of the birch, &c. It very rarely feeds on the leaves of the spruce. The young birds feed chiefly at first on ants and other insects, as well as worms.

The capercali hen makes her nest on the ground, and lays from six to twelve eggs; it is said she sits for four weeks. Her young keep with her until towards the approach of winter; the cocks, however, separate from the mother before the hens. The most clear and ample accounts of these birds are given by Mr. L. Lloyd, in his "Field Sports of the North of Europe," including those of Professor Nilsson and Mr. Greiff, and to these we shall be indebted in the description which our present limits will allow.

Excepting there be a deep snow, the capercali is much on the ground in the day-time; very frequently, however, it sits on the uppermost branches of the pines. During the night, if the weather be very cold, it often buries itself in the snow. Its flight is not particularly heavy or noisy, and it has been observed at a very considerable height in the air, and to be taking a flight of many miles at a time.

The capercaillie lives to a considerable age. The cocks do not attain their full growth until their third year or upwards. The older ones may be easily known from their greater bulk, their eagle-like bill, and the more beautiful glossiness of their plumage. The size of these birds appears to depend, in a great degree, on the latitude where they are found. In Lapland, for instance, the cocks (the hens being much smaller) seldom exceed nine or ten pounds. In Wermeland and adjacent parts, Mr. Lloyd never heard of their exceeding thirteen pounds; whilst in the more southern provinces of Sweden they have not unfrequently been met with weighing seventeen pounds and upwards. The hen capercali usually weighs from five to six pounds.

With the capercali, as with other birds, occasional varieties of plumage will be found. A hen, that was shot in one of the southern provinces of Sweden during autumn, was, with the exception of a few gray feathers on different parts of the body, perfectly white. This bird, however, had several young ones, the plumage of all of which was of the usual colour.

Mr. Lloyd says: "It is a pity that attempts are not made once more to introduce the capercali into the United Kingdom; for, if the experiment were undertaken with judgment, it would most probably be attended with success; the climate, soil, &c., in Scotland at least, not being very dissimilar, in many respects, to the south of Sweden. In Scotland, besides, independently of the natural forests, there are now considerable tracts of land planted with pines, from which trees, when the ground is covered with snow, these birds obtain nearly the whole of their sustenance.

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* Tetrao Urogallus.

"It is true that, once in a while, an odd brace of living capercali have been brought over to England from Scandinavia, though, from some cause or other, and nothing more likely than over or improper feeding, these, in general, have soon perished. The experiment, however, to have a probability of success, should be made with a more considerable number of birds; and then not intrusted to an ignorant person, but to one fully conversant with their habits.

"This I recommended some years ago to the present Duke of Gordon, to whom I am under some obligation. His grace, however, declined acting upon my suggestion, on the ground of there being too little wood in the part of Scotland where his estates are situated. Had this plan been adopted at the period I speak of, it is not improbable but that at the present time there might have been a sprinkling of these noble birds in the Highlands.

"The capercali is often domesticated in Sweden; indeed, at both Uddeholm and Resäter, as well as in other places, I have known those birds to be kept for a long period in aviaries built for the purpose. These were so perfectly tame as to feed out of the hand. Their food principally consisted of oats and of the leaves of the Scotch fir, large branches of which were usually introduced into their cages once or more in the course of the week. They were also supplied with abundance of native berries, when procurable. They were amply provided at all times with water and sand, the latter of which was of a rather coarse quality, and both were changed pretty frequently.

"It has been asserted that the capercali will not breed when in a state of domestication; this, however, is altogether a mistake, as repeated experience has proved to the contrary. Indeed, a few years ago, I procured a brace of those birds, consisting of a cock and hen, for a friend of mine in Norfolk. After a lapse of a few months, the hen laid six eggs, and from these, in process of time, six capercali were produced. The chicks lived until they had attained to a very considerable size, when, owing, as it was supposed, to the effects of a burning sun, to which they had been incautiously exposed, the whole of them, together with the mother, died. On this mishap, the old cock, the only survivor, was turned loose into the game preserves, where he remained in a thriving condition, for about a year and a half. At last, however, he also met his doom, though this was supposed to be owing rather to accidental than natural causes."

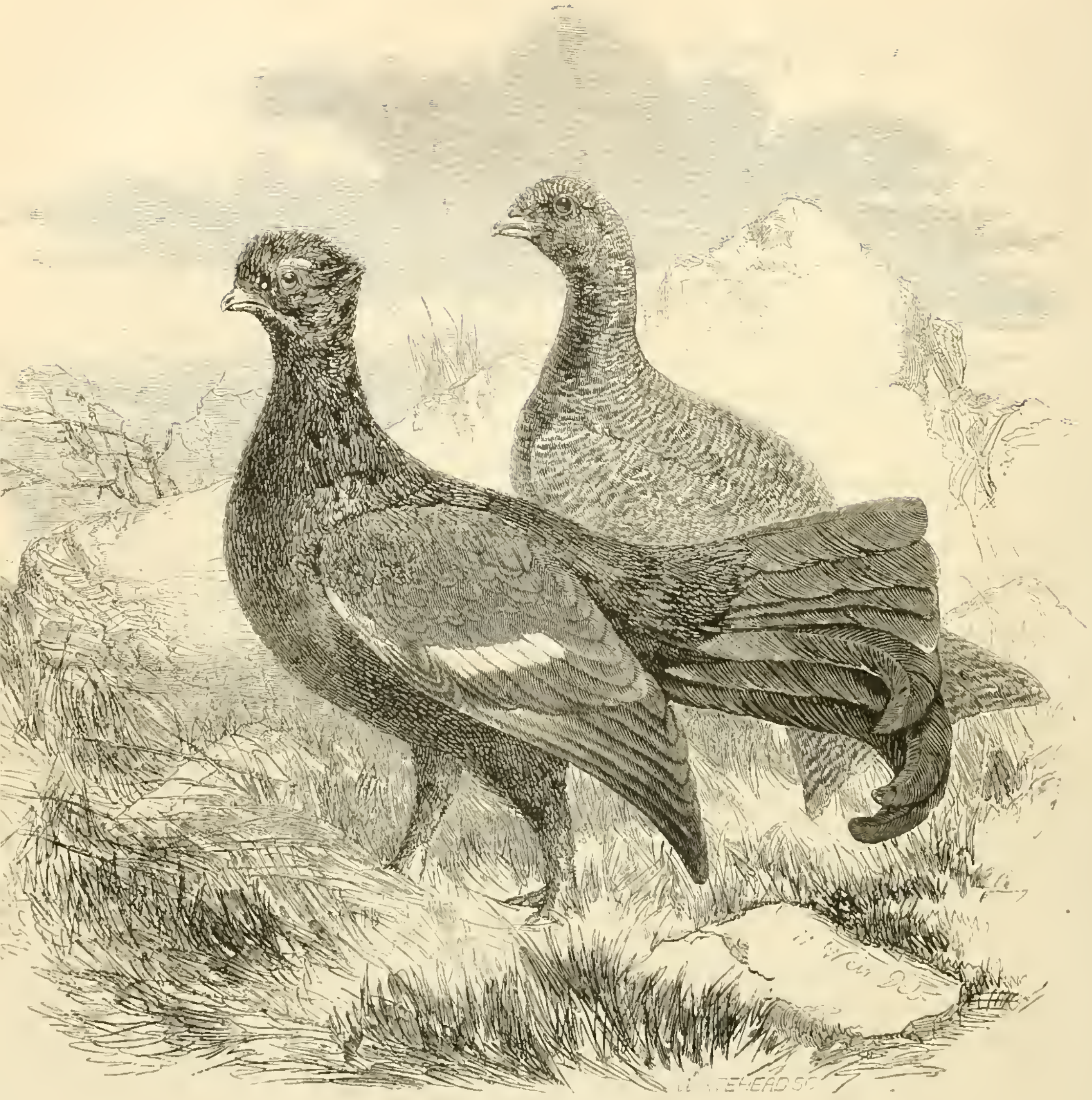
Mr. Nilsson thus alludes to some birds which were at a forge in the province of Dalecarlia, "They were kept together during the winter in a large loft over a barn, and were fed with corn, and got occasionally a change of fresh spruce, fir, pine, and juniper sprigs. Early in the spring, they were let out into an inclosure near the house, protected by a high and close fence, in which were several firs and pines, the common trees of the place. In this inclosure they were never disturbed; and during the sitting season no one approached, except the person who laid in the meat, which at that time consisted of barley, besides fresh sprigs of the kinds before mentioned. It is an indispensable rule that they shall have full liberty, and remain entirely undisturbed, if the hens are to sit and hatch their young. As soon as this had occurred, and the brood were out, they were removed to the yard, which was also roomy, and so closely fenced that the young ones could not escape through; and within this fence were hedges and a number of bushes planted. Of the old ones, one of the wings was always clipped, to prevent their flying. I have seen several times such broods both of black game and capercali, eight to twelve young ones belonging to each hen. They were so tame, that, like our common hens, they would run forward when corn was thrown to them. They should always have a good supply of sand and fresh water."

Regarding the rearing of young capercali, Mr. Grieff makes the following remarks:—"The eggs, usually so called, to be found in ant-hills and stubble, are to be gathered; hard-boiled eggs are to be chopped and mixed amongst fine moistened barley-meal; also peahaulm and trefoil-grass are to be given them for food, and water to drink, which must be placed so that they cannot overturn the pitcher, for they suffer very much if they get wet when they are young. Dry sand and mould they never should be without: when they get larger, and cabbage-leaves, strawberries, cranberries, and blueberries are to be had, they are fond of such food; when they are full-grown, they eat barley and wheat; and in winter they should get young shoots of pine and birch-buds. I have seen many people who thought that they treated young birds well by giving them juniper-berries; but they never resort to this kind of food but in case of necessity."

According to Mr. Nilsson, "when the capercali is reared from the time of being a chicken, he frequently becomes as tame as a domestic fowl, and may be safely left by himself. He, however, seldom loses his natural boldness; and, like the turkey-cock, will often fly at and peck people. He never becomes so tame and familiar as the black-cock.

"Even in his wild state, the capercali frequently forgets his inherent shyness, and will attack people when approaching his place of resort. Mr. Adlerberg mentions such an occurrence. During a number of years, an old capercali-cock had been in the habit of frequenting the estate of Villinge at Wermdö, who, as often as he heard the voice of people in the adjoining wood, had the boldness to station himself on the ground, and during a continual flapping of his wings, pecked at the legs and feet of those that disturbed his domain.

"Mr. Brehm, also, mentions a capercali-cock that frequented a wood a mile distant from Renthendorf, in which was a path or roadway. This bird, so soon as it perceived any person approach, would fly towards him, peck at his legs, and rap him with its wings, and was with difficulty driven away. A huntsman succeeded in taking this bird, and carried it to a place two miles (about fourteen English) distant; but on the following day the capercali resumed its usual haunt. Another person afterwards caught him, with a view of carrying him to the Ofwer Jägmästare. At first the bird remained quiet, but he soon began to tear and peck at the man so effectually, that the latter was compelled to restore him to liberty. However, after a lapse of a few months, this bird totally disappeared, probably having fallen into the hands of a less timid bird-catcher."



THE BLACK GROUSE.*

The Black Grouse, or Heath Cock, is only met with in uncultivated wastes, which are covered with heath and juniper. It feeds on the mountain and bog berries, and when these are scarce, on the tops of heath. This bird abounds in North Wales and in the Highlands of Scotland; and they are found in the southern parts of England.

"Good-morrow to thy sable beak
And glossy plumage dark and sleek,
Thy crimson moon and azure eye,
Cock of the heath, so wildly shy:
I see thee slyly cowering through
That wiry web of silver dew,
That twinkles in the morning air,
Like casements of my lady fair.

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* Tetrao tetrix.

A maid there is in yonder tower,
Who, peeping from her early bower,
Half shows, like thee, her simple wile,
Her braided hair and morning smile.
The rarest things with wayward will,
Beneath the covert hide them still:
The rarest things to break of day,
Look shortly forth and shrink away.

A fleeting moment of delight
I sunn'd me in her cheering sight.
As short I ween the time will be
That I shall parley hold with thee.
Through Snowdon's mist red beams the day,
The climbing herdboy chants his lay,
The gnat-flies dance their sunny ring,—
Thou art already on the wing."[*]

In the spring, the males resort to some particular elevated and open spots, where they may be heard in the morning and evening inviting the females by their call, displaying a variety of attitudes, and uttering, as Mr. Selby says, a crowing note, accompanied by another sound, similar to that made by the whetting of a scythe. This call is obeyed by the females, who do not long, however, engross the attentions of the males.

The females make a slight nest on the ground, frequently sheltered by some low thick bush. Here they deposit from six to eight eggs, of a yellowish-white, spotted and speckled with orange-brown. The males are selfish creatures, leaving them not only to the solitary task of incubation, but to that also of providing for the young.

Considerable packs of these birds, composed as well of cocks as hens, are often to be seen in the northern forests during the winter time. They are most commonly to be met with near to the margins of lakes and rivers, where the birch usually grows in abundance; as it is from the buds of that tree the black-cock derives the principal part of his subsistence during the inclement period of the year.

If the snow be loose and deep, this bird, like the capercaillie, often burrows beneath its surface. In general he is entirely hidden from view, though sometimes his bill protrudes above the snow: thus he is fully protected from the weather, let the temperature be ever so severe.

"In wandering through the forest," says Mr. Lloyd, "I have often come upon a pack of black-cock thus hidden beneath the snow. When I have perhaps least expected it, one of these birds has suddenly emerged from under its covering, and flown up from almost beneath my feet: this is generally the signal for others of the pack to take wing; for, though under the surface of the snow, they seem still to retain the faculty of hearing. In this manner, I have not unfrequently shot black game. From certain indications found in their seats, it would seem as if these birds remain in the snow for more than a single day.

"Though the black-cock is seldom in any degree perceptible when thus buried, a partial aperture is to be seen in the snow. In such cases, it has not very unfrequently happened, that on a person striking the surface of the snow with a stick, in the direction he has reason to imagine the bird has taken, he has succeeded in killing it.

"Many black-cock are shot in Sweden during the winter season in the following manner: In such parts as are resorted to by these birds, an artificial black-cock, composed usually of cloth, is affixed to a tree or fence in some conspicuous place. In the immediate vicinity of this, the sportsman conceals himself in a little hut erected for that purpose. One or more persons now beat the surrounding country, when the birds, being disturbed, not unfrequently make towards the decoy, and thus, of course, fall an easy sacrifice."

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[*] Joanna Baillie.

THE RED GROUSE.*

This is a handsome species, and though called by Pennant *Scoticus,* is worthy of a more general appellation, since it is found not only in Scotland, but in the north of England, in Wales, and in Ireland.

It is, however, especially abundant in Scotland. Mr. Macgillivray says, that the low sandy heaths of the eastern counties of the middle division appear to be less favourable to it than the more moist peaty tracts of the western and northern districts, where the shrubs on which it feeds attain a greater size. In the central and desolate regions of the Grampians it is equally abundant, as on the moors of the Hebrides; and on the hilly ranges of the south, the Pentlands, the Lammermuir, and the mountains of Peebles, Dumfries, and Selkirk, it is still plentiful.

A depression of the ground, sheltered by a tuft of heather, suffices for a nest, which is formed of the stems of ling and grass, with occasionally a few feathers. The eggs are from eight to fourteen or fifteen in number, of a reddish-white ground colour, nearly covered with brown blotches and spots.

The haunts of the red grouse are not so interesting as those of many birds, and among them some of its own race. They are the slopes and flats where the heath is of considerable length, which renders walking over them very fatiguing. There is, however, no danger of being lured into bogs and quagmires in the pursuit of these moor-fowl, for they always keep the firm ground. For this there is a special reason—their feet are not adapted to soft places. As their security from birds of prey is in the heather, and not on the wing, they do not rise, except at the sight of man or quadrupeds, and not always then.

The wariness of these birds has often been noticed. Even when the pack are basking during their noontide repose, in the sunny days of autumn, the head of one or more of the males may be seen sufficiently elevated above the cover as to see in all directions. Speedily is the visitor espied, when a short call-note is uttered, the heads disappear, and the whole pack lie close till he passes. So difficult is it to raise them, especially when they are not in good feather, and the season has been rather unfavourable, that one but little acquainted with the moors may wander for days, in places where they are most abundant, and not see a single bird.

When disturbed, the grouse flies low and heavily, rapidly vibrating its whirring wings, and taking a direct course to some distant spot. It is not thus, however, that it prevails when really alarmed, when the gun of the sportsman is heard, or the hawk is on the wing giving chase. It then flies with extreme rapidity and strength, interrupting occasionally the rapid vibration of its wings to sail on them for a short space; and this it does more particularly when sweeping down parallel to the steep declivity of a mountain. Heavy as the red grouse is, and comparatively short as are its wings, its flight is capable of being long protracted, without any diminution of rapidity.

The male does not assist the female in the task of incubation, but yet he does not forsake her. He waits to assist her in the care and protection of her brood, and is even assiduous in his attentions. While running about, and as yet unable to fly, the young are exposed to many dangers, especially from weasels, polecats, and hawks. But the parents are on the alert, are bold in their defence, and practise various devices to entice the intruder from the spot where they lie crouching.

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* Tetrao Scoticus.—Penn.

When the young are capable of flight, they do not immediately separate from the parents, but still keep in their company, the old male being the leader of the party. He is now extremely watchful, and on the approach of an enemy stretches up his neck amidst the heather, and uttering a loud cackle of alarm, takes wing, followed by the female and the brood; their flight is low, and in a direct line to some distant cover. At the close of the autumn, several broods often associate together, and remain in company during the winter. Hence it is they are called *packs*.

Their natural enemies—the birds of prey—have been much thinned. The seasons have been rendered milder in their haunts by the progress of cultivation in their vicinity; and the throwing of much of the country into sheep-walks has given them more repose in the central highlands than when the glens abounded with human dwellings. Yet still the boundaries of the moor-fowl have been circumscribed, and the pasturage of sheep tends to destroy their favourite heather, which is the only good cover that they have, both from the weather and their enemies. It is, therefore, probable that, with more preservation than formerly, the numbers of these birds are considerably diminished.

THE PTARMIGAN.*

The common Ptarmigan is not only a native of Scotland, but of the higher latitudes of continental Europe, where the willow ptarmigan and the rock ptarmigan are also abundant. In their manners the ptarmigans naturally resemble each other. But in Scotland, a comparatively temperate climate, the bare and bleak mountains are the permanent abode of the species there indigenous; while, under the intense severity of winter within the polar circle, they all quit the more exposed situations and seek the willows and copse-woods which border the rivers, and stretch over the sheltered vales. Mountain-berries and heath-shoots in summer, spring-buds and leaves in winter, constitute their food, in search of which, as well as for the sake of shelter, they burrow beneath the snow.

Perhaps the changes of plumage in none of the feathered tribes are more worthy of attention than those the ptarmigans undergo. Their full summer plumage is of a yellow more or less inclining to brown, beautifully barred with zig-zag stripes of black; their winter plumage is pure white, except that the outer tail-feathers, the shafts of the quills, and, in our species, a streak from the eye to the beak, are black.

Now, in both these cases, there is a benevolent provision for the safety of these birds. Thus, in summer the brown patches of heath on the rocky sides of the mountains assimilate well, in their broken and blended tints, with the attire of the ptarmigans; and as concealment from their enemies is one of the laws of nature, this end is effectually answered. But when the mountains are covered with snow, and all around is attired in a mantle of dazzling white, were the plumage of these birds to continue as it was, they would at once attract the Iceland falcon and the Snowy owl. The white feathers, on the contrary, which clothe them at this season, are sure to defend them from their foes.

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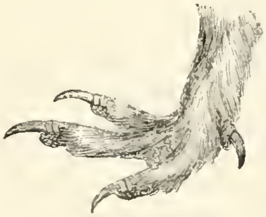
* Lagopus Mutus.--Selby.

The saying of the poet may often be recalled in the study of this as well as of other portions of the Divine operations:—

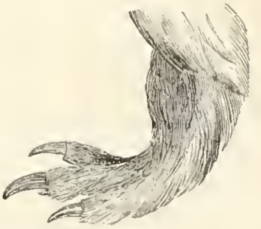
"In human works, though laboured on with pain,
A thousand movements scarce one purpose gain;
In God's, one single can its end produce,
Yet serves to second, too, some other use."

And so it is here. The white plumage is a defence against the cold of winter, as are other provisions by which it is accompanied. For then the legs of the ptarmigan, which have been covered with feathers of a hair-like and downy texture, extending as far as the toes, are now so enveloped as to resemble the feet of a well-furred quadruped; while the bill is almost hidden. The additional reason of this will speedily be apparent.

It is well known that colour greatly influences the rate at which bodies either reflect heat, or acquire and part with it, and that objects which reflect heat the most part with it the least. Reflection takes place most readily in objects of a white colour, and from such, consequently, heat will radiate with difficulty. If, then, two animals, one of a black colour and the other white, be placed in a higher temperature than that of their own body, the heat will enter the one that is black with the greatest rapidity, and elevate its temperature considerably above the other. But when these animals are placed in a situation the temperature of which is considerably lower than their own, the black animal will give out its heat, by radiation, to every surrounding object colder than itself, and speedily have its temperature reduced; while the white animal will part with its heat by radiation at a much slower rate. The winter colour of the ptarmigan, therefore, combined with its increased fulness of plumage, tends to limit the expenditure of the vital heat generated in the system; though some expenditure must take place. This power of generating heat in the animal system, it may be added, is the principle on which all animals are enabled to withstand the effect of cold, and to preserve life and health in a low temperature.



FOOT OF THE PTARMIGAN IN WINTER.



FOOT OF TETRAO PARADOXUS. PALLAS.

The *Tetrao paradoxus*, the foot of which is represented, inhabits the steppes of Bucharia and Tartary.

THE PINNATED GROUSE.*

This American bird is often called the heath-hen. In size, shape, and habits, it strongly resembles the red grouse, already described; but the plumage is not at all alike; for the former is of a peculiar gray, or dark ash-colour, without the dusky red of the latter. The flavour of the flesh much resembles that of the British grouse, but the colour of it is scarcely so dark.

These birds are found, for the most part, in those wild and elevated situations where, either from the sterility of the soil or the very considerable altitude, there are no forest-trees; the only vegetation being two or three sorts of heath and a little alpine moss. The subsistence of these grouse is, therefore, restricted to the young shoots of alpine plants, or the berries they produce; for during the rigours of a North American winter, they are never known to migrate to milder and more settled regions, or, indeed to any situations which do not yield their favourite food.

An adult grouse, when fat, weighs about three pounds avoirdupois. But the eagerness of the sportsmen is so great, that a large proportion of those they kill are but a few months old, and have not attained their full growth.

The season for pairing is in March, and the breeding-time is continued through April and May. The male grouse utters a peculiar sound, which may be heard on a still morning for three or more miles, while the parts about the throat are sensibly inflated. This sound is called *tooting*, from its resemblance to the blowing of a conch or horn from a remote quarter.

The female makes her nest on the ground, in recesses very rarely discoverable by man. She usually lays from ten to twelve eggs, of a brownish colour, much resembling those of the guinea-hen. When hatched, the brood is protected by her alone; and, surrounded by her young, she exceedingly resembles the domestic hen with her brood. When she utters a cry of alarm, the little ones immediately scamper to the brush, and while they are skulking into places of safety, their anxious parent beguiles the spectator by letting fall and fluttering her wings, limping along the path, rolling over in the dirt, and other pretences of inability to fly and even to walk.

During the period of pairing, and while the females are occupied in incubation, the males are accustomed to assemble, principally by themselves. They repair to some select and central spot, where there is very little underwood. The time of meeting is the break of day, and as soon as the light appears, sometimes forty or fifty are thus assembled from the neighbourhood. When the dawn is past, the ceremony begins by a low tooting from one of the cocks. This is answered by another. They then come forth from the bushes, one by one, and strut about with all the pride and ostentation they can put forth. Their necks are incurvated; the feathers on them rise into a kind of ruff; the plumes of their tails are expanded like fans; and their movements emulate, so to speak, the pomp of the turkey-cock. They seem to vie with each other in stateliness; and as they pass one another, frequently cast looks of insult, and utter notes of defiance. These are the signals for battles, in which they engage with wonderful spirit and fierceness. During these contests, they leap a foot or two from the ground, and utter a discordant, cackling, screaming cry.

To the production of this sound Wilson particularly alludes. "What appears to me," he says, "the most remarkable circumstance relative to this bird is, that not one of all those writers who have attempted its history have taken the least notice of those extraordinary bags of yellow skin which marks the neck of the male, and which constitute so striking a peculiarity. These appear to be formed by an expansion of the gullet, as well as the exterior skin of the neck, which, when the bird is at rest, hangs in loose, pendulous, wrinkled folds, along the side of the neck, the supplemental wings, at the same time, as well as when the bird is flying, lying along the neck. But when these bags are inflated with air, in breeding-time, they are equal in size, and very much resemble in colour, a middle-size fully ripe orange. By means of this curious apparatus, which is very observable several hundred yards off, he is enabled to produce such extraordinary sounds, which, though they may easily be imitated, are yet very difficult to describe in words. The sound consists of three notes, of the same tone, resembling those produced by the night hawks in their rapid descent, each strongly accented, the last being twice as long as the others."

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* Tetrao Cupido.

THE PARTRIDGE.*

The Partridge is essentially the tenant of the open corn-lands. It is common in the corn counties of Britain and on the adjacent continent, being, in fact, most abundant where the labours of the ploughman are the most extensive.

In February the pairing time takes place, and the males often fight obstinately with each other. The female lays her eggs at the latter part of May or the beginning of June, selecting a shallow excavation under a tuft of herbage for their reception. The male leaves the work of incubation entirely to his mate, but joins her when the brood is hatched, and unites with her in its protection.

Few birds are more solicitous in rearing their young, and many are the stratagems which the parents will practise to draw off attention from the brood, which by signal-notes is scattered and recalled. Of this Markwick gives the following proof:—"It is not uncommon to see an old partridge feign itself wounded, and run along the ground fluttering and crying before either dog or man, to draw them from the helpless unfledged young ones. I have often seen it, and once, in particular, I saw a remarkable instance of solicitude in the old bird to save its brood. As I was hunting with a young pointer, the dog ran on a brood of very small partridges; the old bird cried, fluttered, and ran tumbling along just before the dog's nose, till she had drawn him to a considerable distance, when she took wing and flew still further off, but not out of the field. On this the dog returned to me, near the place where the young ones lay concealed in the grass. This the old bird no sooner perceived than she flew back again to us, settled just before the dog's nose, and by rolling and tumbling about again, drew off his attention from the young, and thus preserved her brood a second time. I have also seen when a kite has been hovering over a covey of young partridges, the old birds fly up at the bird of prey, screaming and fighting with all their might to preserve their brood."

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* Perdix Cinerea.—Penn.

Selby mentions a well-authenticated instance in which two partridges, in defence of their brood, gave battle to a carrion-crow, and actually held the miscreant till taken away from them by the spectator of the scene.

Except during the breeding season, partridges associate in flocks or coveys.

> "Fearful and cautious are the latent prey,
> As in the sun the circling covey bask
> Their varied plumes, and watchful every way,
> Through the rough stubble turn the secret eye.
> Caught in the meshy snare, in vain they beat
> Their idle wings, entangled more and more.
> Nor on the surges of the boundless air,
> Though borne triumphant, are they safe;
> Glanced just and sudden from the fowler's eye,
> The gun o'ertakes their sounding pinions, and again,
> Immediate, brings them from the towering wing,
> Dead to the ground, or drives them wide, dispersed,
> Wounded, and whirling various, down the wind."*

So rapid, however, is the multiplication of the partridge as almost to defy extermination; nor will persecution drive it from its haunts. The covey will rise, whirl about, and alight, again and again; but though they may be diminished by the gun, the survivors will often continue in the same turnip-field, or on the same clover-stubble, as pertinaciously as a mountain tribe has clung to their fastnesses in a war of extirpation.

The partridge, like the pheasant, feeds early in the morning and late in the evening, the covey resting during the day among herbage, or basking on dry banks, or, like the fowl, dusting their plumage and cleaning their feathers. At night they generally choose the middle of a large field as their roosting-place, and sit crowded together. The call of the partridge is usually heard before the covey retire to rest; they answer each other, and thus the stragglers are collected.

On the esteem in which the partridge is held for its flesh we need not expatiate. An old distich says:—

> "If partridge had the woodcock's thigh,
> 'Twould be the best bird ere did fly."

THE RED-LEGGED PARTRIDGE.†

An enemy to the bird just described has been introduced from the continent into England within about sixty years; driving it from the lands and inclosures in which it has become established.

The Red-legged Partridge is a native of France and southern Europe, and the isles of Jersey and Guernsey. The Marquis of Hertford and Lord Rendlesham procured some of its eggs, and had them placed under the common hen, the former nobleman at one of his shooting residences in Suffolk, the latter at an estate in the same county. It was from these two spots that the species gradually extended itself; and in Norfolk, Suffolk, Essex, and the adjacent counties, it is now very abundant. The flesh of this bird, though highly prized by some, is inferior to that of the common partridge, and it is also less juicy.

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* Thomson.

† Perdix Rubra.—Briss.

THE QUAILS.*

In modern systems of ornithology, the quails, though bearing a striking resemblance to the partridge, are ranked as a different genus of the *Tetraonidæ*, or grouse tribe. They differ from that bird in being smaller, in having a more delicate beak, a shorter tail, and no spur on the legs; and in having the first three quills of the wing larger, and, consequently, better adapted to flight. Another point may also be added, for quails perform very distant migrations, while the partridge seldom takes long flights.

This would not be, at first sight, anticipated; for, of birds of passage, the quail is, perhaps, the most imperfectly adapted for flight, hence the reports of its having been seen crossing extensive tracts of the ocean are questioned by many authors. Be this as it may, the fact of their migration is indubitable, and has been noticed from time immemorial. "When we sailed from Rhodes to Alexandria," says Bellonius, "about autumn, many quails, flying from the north to the south, were taken in our ship; and sailing at spring-time the contrary way, from the south to the north, I observed them on their return, when many of them were taken in the same manner." What is here mentioned has been observed by many others, though we are inclined to believe, that where an ordinary supply of food can be obtained, the quail is by no means given to long journeys. In Britain, for example, they often merely leave the inland counties, and migrate to the downs and sandy links which border upon parts of the sea-coast, and in such sheltered and warm districts pass the winter. In general terms, it may be stated of the quail, that it is a bird of passage, arriving in latitudes the same as our own about the middle of May, and returning southward in the month of September. In Britain it is comparatively a rare bird, and we must therefore look to France, the countries bordering the Mediterranean, to Asia Minor, and to China, for its true habits; and in all these countries its migrations from south to north, or from the sea-coast to the interior, in spring—and from north to south, or from inland to the sea-coast, in winter—are regular and familiar occurrences. On their passage, they fly during the night or early morning, and rest, according to their usual habit, throughout the day, when they are easily captured. As a proof of their nocturnal flight, it is observed by Pliny, "that they alight in such numbers on ships (while the sailors are asleep), by their settling on the masts, sails, &c., as to bear down barks and small craft, and finally to sink them; and on that account seamen have a great dread of them when they approach near land."

So unerring is their instinctive knowledge of the precise time for migration, that they retain it even though reared and kept in bondage. We have a very singular proof of this in some young quails, which, having been bred in cages from the earliest period of their lives, had never enjoyed, and therefore could not feel the loss of liberty. It is thus stated by the Rev. Mr. Daniel, in his "Rural Sports:" "For four successive years," says he, "they were observed to be restless, and to flutter with unusual agitations regularly in September and April; and this uneasiness lasted for thirty days at each time. The birds passed the whole night in these fruitless struggles, and always on the following day appeared dejected and stupid."

Quails, according to Mr. Daniel, are seen in immense flocks traversing the Mediterranean from Italy to the shore of Africa, and returning again in spring, frequently alighting on the islands of the Archipelago, which they almost cover with their numbers. Ortygia was named from them; and so abundant are they in Capri, that the principal revenues of the bishop and some convents arise from the quails they send to Naples. At their arrival in Alexandria, such multitudes are exposed in the markets, that three or four may be bought for a halfpenny. Crews of merchant vessels have been fed upon them; and complaints have been laid at the consul's office by mariners against their captains for giving nothing but quails to eat—so much does over-abundance depreciate the greatest delicacies.

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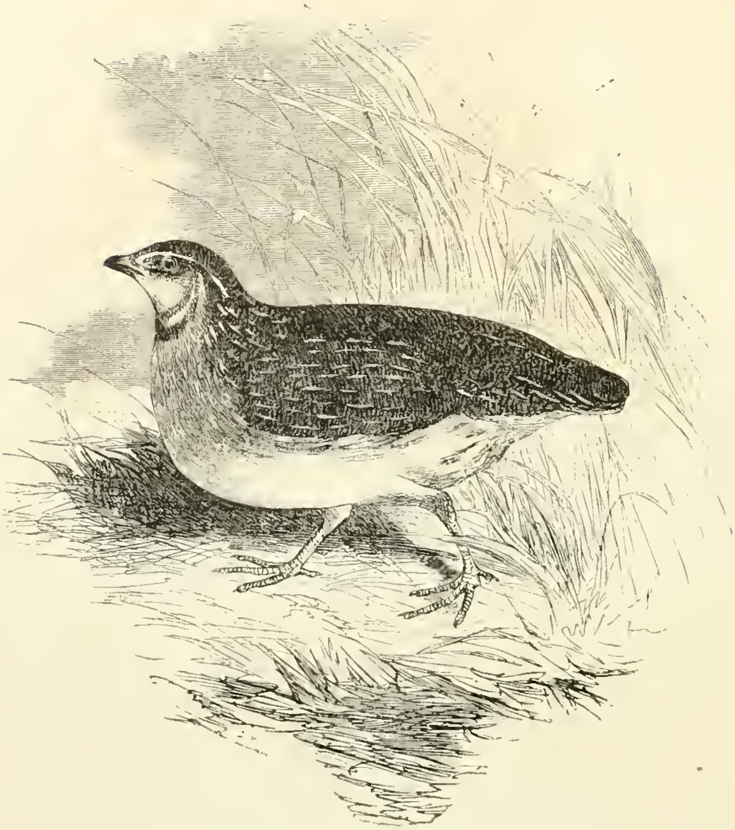
* Coturnix.

The author of "Letters from the Campagna Felice" relates the following anecdote, which also illustrates how incredibly abundant quails sometimes are on this part of the Mediterranean coast:—"During the time that the Capitani Bey blockaded the harbour of Alexandria with his Turkish squadron, one of the Greek sailors of his ship had caught two or three quails, which had perched on the rigging. The Mussulman rewarded him generously; and, desirous of varying the hard fare which a blockading squadron has occasionally to sustain, by a more ample supply of such a delicate rarity, promised a piastre for every bird that should be brought him. In a few days the rigging, sails, and yards were covered with flocks of quails; great numbers were caught, of course, and every one was brought into the cabin, as the price was liberally fixed. To escape the dilemma of either ruining his purse or breaking his promise, the bey resorted to the alternative of standing out to sea, as by leaving the coast he got rid of the visits of these expensive strangers." Such prodigious numbers also appear on the western coasts of the kingdom of Naples, that a hundred thousand have in one day been caught within the space of three or four miles. Most of these are taken to Rome, where they are in great request, and sold for extremely high prices. Galt, in his travels through Sicily, thus describes the fervour and excitement of the quail season:—"In the month of September vast flocks of quails come over from the continent to Sicily, and being fatigued by their flight, are easily shot on their arrival. The pleasure which the inhabitants of Palermo take in this sport is incredible. Crowds of all ages and degrees assemble on the shores, and the number of sportsmen is prodigious. In one group I reckoned eleven, and in less than half a mile thirty-four groups, each consisting of from two to five persons, with as many dogs. The number of boats is perhaps greater than those on the land. From morning to night they watch the appearance of the birds; the aquatics first seeing them, their firing rouses and gives signal to the landsmen: then enviable is the lot of the apprentice who, with a borrowed old musket or pistol—no matter how unsafe—has gained possession of the farthest accessible rock, where there is but room for himself and dog, which he had fed with bread only all the year round for these delightful days, and which sits in as happy expectation as himself for the coming of the quails."

Strange as it may seem to some, the *song* of quails has been long noted among their attractive qualities. It is noticed by Athenæus; and Dr. Bechstein, in his "Natural History of Cage-Birds," reckons, besides the beauty of its form and plumage, the song of the quail as no slight recommendation to the amateur. He states that, in the breeding season, the song of the male commences by softly repeating tones resembling *verra, verra,* followed by *pievorie,* uttered in a bold tone, with the neck raised, the eyes shut, and the head inclined on one side. Those that repeat the last syllables ten or twelve times consecutively are the most esteemed. The song of the female only consists of *verra, verra, pupu, pupu,* the two last syllables being those by which the male and female attract each other's attention. When alarmed or angry, their cry resembles *guillah,* but at other times it is only a gently purring murmur. The quail never sings when left to run about in a light room, except during the night, but continually when in a darkened cage; so firmly rooted are its nocturnal instincts.

"Warm as a quail," is a French proverb. The Chinese have the same notion; they use this bird for warming their hands in cold weather—an application which is frequently delineated in Chinese paintings.



THE QUAIL.*

The Quail, with which we are acquainted, is much less than the partridge, being only about seven inches in length; it, however, resembles that bird in its form and modes of life, and its flesh is excellent. It is widely spread, being found throughout the whole of southern and temperate Europe, and the greater part of Asia and Africa, but is everywhere migratory.

The female makes an artless bed in a slight hollow of the ground for her eggs, which are of a green tint, and vary in number from eight to twelve, or even fifteen. In England the quail makes its appearance in May, but not in such great abundance, it is said, as formerly. In October it departs to Africa, which is the great winter abode of this species.

The female has not the dark half-circular marks descending down the sides of the neck, nor the black patch in front, which distinguish the male bird. The feathers on her breast, however, are strongly marked with a small dark spot on each side of the light straw-coloured shaft. The young birds of the year resemble the adult female.

Richly cultivated lands are the favourite localities of these birds, and especially extensive wheat-fields. Unlike the partridge, they are polygamous, and on their first arrival the males may be heard uttering their whistling call, in defiance of each other.

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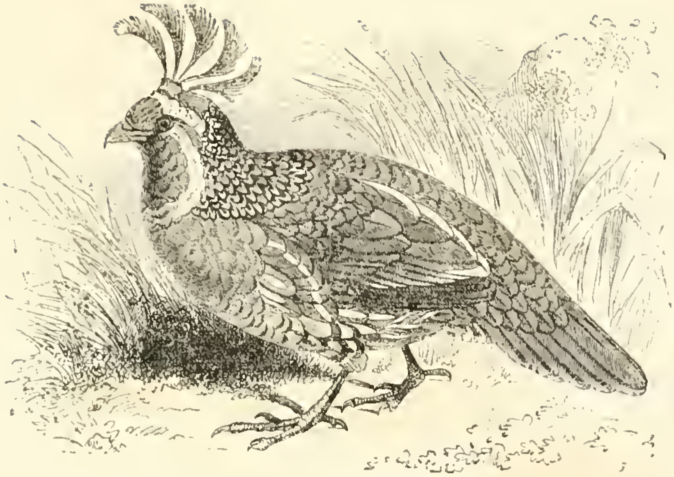
* Coturnix Dactylisonans.



THE CALIFORNIAN QUAIL.*

There is a group in America representing the quails and partridges of the Old World, to which has been given the name of *Ortyx*. These birds have a greater stoutness of bill than those just mentioned; the tail, which is somewhat wedge-shaped and rounded at the extremity, is also more elongated. They closely resemble the quails in their general manners and pugnacious habits, but they have no spurs on the tarsi. They frequent thickets and bushes, building their nests on the ground, and migrate during the winter to more temperate regions.

The most beautiful species is that of which we give an engraving. This bird was first discovered by the unfortunate La Perouse; and it is stated by the editor of his voyage, that it was found in great abundance in the low woods and plains of California, assembled in bands of two or three hundred, and that it was fat and well-flavoured.

Little, however, was known of the Californian Quail till Captain Beechey brought over several, as one result of his voyage of discovery. The beautiful crest on the head adds greatly to their appearance.

THE VIRGINIAN COLIN.†

This bird is a general inhabitant of North America, from the northern parts of Canada and Nova Scotia, in which latter place it is said to be migratory, to the extremity of the peninsula of Florida. Audubon says, its common name in the eastern and middle districts is that of quail, but in the western and southern states it is called a partridge. Their food, in a wild state, consists of grain, seeds, insects, and berries; but buck-wheat and Indian corn are also particular favourites.

The following interesting narrative appeared in the "Magazine of Natural History," from a correspondent residing in Staffordshire:—"A few years ago I purchased two brace of these elegant little birds from Mr. Cross, of Exeter Change, London, and brought them home with me in the coach. I have a small garden, walled round, and covered over with wire, into which I turned them, but each separated from the other by a wire partition. Towards the latter end of May, I perceived one of the cock birds carrying straws, and twisting them about over his head; and I found they were making a nest within a bundle of pea-sticks, which were placed in the garden for them to run under and hide themselves.

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* Ortyx California.

† Perdix Virginiana.—Wilson.

"This nest was the joint production of male and female; it was placed on the ground within the pea-sticks, and shaped much like a wren's, with a hole on one side, and covered over at top. After the hen had laid about twelve eggs she began to sit, and with as much assiduity as our common hen. When I thought it was her time to hatch, I examined her nest, and found it deserted, and the egg-shells, which had evidently contained young birds, lying about. Much pleased with this circumstance, I went cautiously about to find the dam with her little ones; and, after searching a considerable time, the first intimation I had of her presence was from her flying in my face with great agitation, like our common hen. I retired much gratified, and observed the young ones, nine in number, collect again under the wings of their mother. The assiduity of this excellent parent was truly exemplary, and her attention unremitting, and she reared them every one with very little trouble. What is very singular, there were eight cocks and but one hen, all of whom were reared till they moulted, and got their dull plumage; when, from some cause which I never could ascertain, they began to droop one after another; and before Christmas all the young birds died. Though I examined the stomachs and gizzards of most of them, yet I never could find out the cause of their deaths; but I have little doubt of its being some deleterious substance picked up in the place where I separated them from the old ones, soon after they became fully fledged, as the old birds escaped this mortality.

"The other pair never bred; but it was easily accounted for, as the hen was unwell from the time I turned them down, and she lingered on till October, and then died.

"Previously to and during the time the hen was sitting, the cock serenaded her with his harsh and singular notes; some of them very similar to the mewing of a cat. He had also a peculiarity of constantly running round in a circle, till the ground whereon he performed his evolutions was worn as bare as a road, and the turf trodden down much in the same way as it is by the Ruff in the fens during the season of incubation.

"Nothing could be more cordial and harmonious than this happy family. When the shades of evening approached, they crowded together in a circle on the ground, and prepared for the slumbers of the night by placing their tails altogether, with their pretty mottled chins facing to the front, in a watchful round-robin.

"When food was thrown in for them, which consisted chiefly of spirted barley and wheat, and occasionally bread, the male bird would peck at the grain, but not eat any himself until he had called his family around him first to partake of the food, which he did with many soft blandishments, and with much strutting and spreading of the wings and tail.

"I was greatly disappointed at the loss of this interesting family; and I waited with some impatience for the result of another season. The season at length arrived: they built their nest again as before; the hen laid about sixteen eggs; when, to my great mortification, just as she had begun to sit, I found her dead one morning; and cannot otherwise account for the circumstance than by supposing that something must have frightened her in the night, and caused her to fly up with violence against the wires, which proved fatal to her. Thus ended my hopes of domesticating this elegant little bird, as I have not been able to procure another female. I wished much to breed some more, and turn them out if successful, as they lay many eggs, and are much more easily reared than either the pheasants or partridges."

Next to the large and varied family just considered, is another, termed *Struthionidæ*. Its members, though differing from each other in many important particulars, all agree in certain prominent features. Their form is massive and heavy, the great development of power being concentrated in the limbs, while the organs of flight are feeble, and unable to raise the birds into the air.

This bird is not unknown in England. To take only one instance, Mr. Yarrell says: "In the collection of Mr. Henson, at Cambridge, was a specimen of the Virginian colin, which was killed at Holkham; and in reference to the existence of this species in Norfolk, the Rev. Richard Lubbock wrote to me as follows:—'A nest was found at Barton in this county, three or four years back, containing numerous white eggs, which were sold to a bird-preserver in Norwich. Two are in my possession. I endeavoured to ascertain the whole number of the eggs, but could not: there must have been above a dozen. The nest was found in a marsh. Mr. Coke, I have understood, turned off many of these birds at Holkham, with what ultimate success I know not. This made me suppose that the eggs in question might belong to this bird, particularly as a fen-man, near the place where this nest is said to have been found, mentioned to me his having seen a bird like a partridge in flight, but much smaller. Mr. Salmon, of Thetford, had also some of these eggs; and I think he told me he showed them to Mr. Hewitson.'"

THE OSTRICH.*

The Ostrich, the Camel-bird of the Arabs, has been celebrated from the earliest antiquity. It is found throughout Arabia and Africa, everywhere shunning the presence of man, and preferring the solitude of the desert.

The food of the ostrich consists of the tops of the various shrubby plants which even the most arid parts of South Africa produce in abundance. It is so easily satisfied with regard to water, that it is constantly to be found in the most parched and desolate tracts which even the antelopes and the beasts of prey have deserted. Its cry at a distance so much resembles that of the lion, that even the Hottentots are said to be sometimes deceived by it.

The male ostrich of South Africa, at the time of breeding, usually associates to himself

* Struthio Camelus.—Linn.

THE CASSOWARY.

from two to six females. The hens lay all their eggs together in one nest, the nest being merely a shallow cavity scraped in the ground, of such dimensions as to be conveniently covered by one of these gigantic birds in incubation. An ingenious device is employed to save space, and give at the same time to all the eggs their due share of warmth. Each one of the eggs is made to stand with the narrow end on the bottom of the nest, and the broad end upwards; and the earth which has been scraped out to form the cavity is employed to confine the outer circle, and keep the whole in the proper position. The hens relieve each other in the task of incubation during the day, and the male takes his turn at night, when his superior strength is required to protect the eggs or the newly-fledged young from the jackalls, tiger-cats, and other enemies. Some of these animals, it is said, are not unfrequently found lying dead near the nest, destroyed by a stroke from the foot of this powerful bird.

No fewer than sixty eggs are sometimes found in and around an ostrich's nest; but a smaller number is more common; and incubation is occasionally performed by a single pair of ostriches. Each female lays from twelve to sixteen eggs. They continue to lay during incubation, and even after the young brood are hatched. The supernumerary eggs are not placed in the nest, but around it, being designed to aid the nourishment of the young birds, which, though as large as a pullet when first hatched, are probably unable at once to digest the hard and acrid food on which the old ones subsist. The period of incubation is from thirty-six to forty days. Occasionally the nest is left by all the birds in the middle of the day, the heat of the sun being then sufficient to keep the eggs at the proper temperature.

FOOT OF THE OSTRICH.

FOOT OF THE CAMEL.

Of the ostrich Dr. Shaw says, when alluding to the statement in reference to this bird in the Book of Job:—"On the least noise or trivial occasion she forsakes her eggs, or her young ones, to which, perhaps, she never returns; or, if she does, it may be too late either to restore life to the one, or to preserve the lives of the others. Agreeable to this account, the Arabs meet sometimes with whole nests of these eggs undisturbed; some of them are sweet and good, others are addled and corrupted; others, again, have their young ones of different growths, according to the time, it may be presumed, they may have been forsaken of the dam. They often meet with a few of the little ones, no bigger than well-grown pullets, half-starved, straggling and moaning about like so many distressed orphans for their mother. In this manner the ostrich may be said to be hardened against her young ones, as though they were not her's; her labour in watching and attending them, so far, being vain, without fear, or the least concern of what becomes of them afterwards."

An ostrich egg is considered as equal in its contents to twenty-four of the domestic hen. When taken fresh from the nest they are very palatable, and are wholesome, though somewhat heavy food. The best mode of cooking them is that practised by the Hottentots, who place one end of the egg in the hot ashes, and making a small orifice in the other, keep stirring the contents with a bit of stick till they are sufficiently roasted; and then, with a seasoning of salt and pepper, there is a very nice omelette.

The ostrich of South Africa is a prudent and wary bird, and displays but little of the stupidity charged upon it by some naturalists. On the borders of the Cape colony, at least, where it is eagerly pursued for the sake of its valuable plumage, the ostrich discovers no want of sagacity in providing for its own safety or the security of its young. It adopts every possible precaution to conceal the place of its nest, and uniformly abandons it, after destroying the eggs, if it perceives that they have been disturbed, or the footsteps of man have been discovered near it. In relieving each other in hatching, the birds are said to be careful not to be seen together at the nest, and are never observed to approach it in a direct line.

Mr. Lawrence found the œsophagus of an ostrich which he dissected dilated into an immense bag capable of holding several pints of water, and five or six times larger than the gizzard itself, which was placed on the right and anterior part of this dilatation. The glands did not surround the tube, so that, Mr. Lawrence observes, the term "zone" would be here inapplicable. They formed, he tells us, a long narrow band, commencing at the termination of the œsophagus, and running along the front of the bag towards the gizzard. This band measured about twelve inches in length, and not more than three at its greatest breadth. The size of the individual glands varied; they were largest in the middle, and decreased towards either margin of the band; some of them equalled a large pea, and their openings were in proportion. They were arranged in close apposition to each other, and the inner surface of the pouch was covered by a continuation of the insensible lining of the gizzard, which separated very easily from the surface. The cæca in the ostrich are characterised by a remarkable spiral valve, and the villi in its small intestines are rather flat thin laminæ than villi; but they are at the same time long and numerous, presenting a very elegant structure. The large intestine of the ostrich presents a remarkable deviation from the structure usually seen in birds; for the surface of that intestine is in them generally uniform on its surface, whereas in the ostrich, the large intestines, which are very long, have numerous transverse folds, like the *valvulæ conniventes* of man.

Sir Everard Home thus describes the stomach of the ostrich:—"In the African ostrich the gastric glands are similar in structure to those of the American, only the processes belonging to each gland are much more numerous: they are in general twenty, or thereabouts. The cardiac cavity into which they open is not only very large, but is continued down in the abdomen below the liver to a considerable length, and then is bent up to the right side, and is there connected with a gizzard, the digastric muscle of which is as strong as in granivorous birds in general. This gizzard is situated so high up as to be nearly on a level with the termination of the œsophagus. The cardiac cavity is everywhere lined with a thin cuticle, except where the ducts of the gastric glands open. Their orifices occupy an oval space on the left side, extending from the top to the bottom of the cavity, and about four inches broad. The size of the gizzard is small when compared to that of the bird. The grinding surfaces do not admit of being separated to any great distance from one another. On one side there are two grooves, and two corresponding ridges on the other. Beyond the cavity of the gizzard is an oval aperture with six ridges covered with cuticle, which oppose the passage of the contents of the cavity till they are reduced to a small size. In the cassowaries and American ostrich, the stones and other hard bodies which those birds swallow must, from their weight, force their way into the gizzard, which has a cavity adapted to receive them; but in the African ostrich all such substances must remain in the cardiac cavity, both from its being the most depending part, and from the cavity of the gizzard being too small to admit of their entering it. The cardiac cavity, in the instance which I examined, contained stones of various sizes, pieces of iron, and halfpence; but between the grinding surfaces of the gizzard there were only broken glass beads of different colours, and hard gravel mixed with food."

Though the ostrich is generally admitted to go faster than the swiftest horse, yet the Arabs on horseback contrive to run these birds down, their feathers being valuable, and their flesh not to be despised. The best horses are trained for this chase. When the hunter has started his game, he puts his horse on a gentle gallop, so as to keep the ostrich in sight, without coming too near to alarm it and put it to its full speed.

On finding itself pursued, the bird begins to run at first but gently, its wings, like two arms, keeping alternate motion with its feet. It seldom runs in a direct line, but, like the hare, doubles, or rather courses, in a circular manner; while the hunters, taking the diameter, or tracing a smaller circle, meet the bird at unexpected turns, and with less fatigue to the horses. This chase is often continued for a day or two, when the poor ostrich is starved out and exhausted, and finding all power of escape impossible, it endeavours to hide itself from the enemies it cannot avoid, running into some thicket, or burying its head in the sand; the hunters then rush in at full speed, leading as much as possible against the wind, and kill the birds with clubs, lest the feathers should be soiled with blood.

M. Adanson saw two tame ostriches, which had been kept two years at the factory of Podor, on the south bank of the Niger. He says:—"They were so tame that two little blacks mounted both together on the back of the largest; no sooner did he feel their weight, than he began to run as fast as ever he could, till he carried them several times round the village; and it was impossible to stop him, otherwise than by obstructing the passage.

"This sight pleased me so well, that I would have it repeated; and, to try their strength, I made a full-grown negro mount the smallest and two others the largest. This burden did not seem to me at all disproportioned to their strength. At first they went at a moderate gallop; when they were heated a little they expanded their wings, as if it were to catch the wind, and they moved with such fleetness that they seemed to be off the ground. Everybody must some time or other have seen a partridge run, consequently must know that there is no man whatever able to keep up with it; and it is easy to imagine, if this bird had a longer step, its speed would be considerably augmented. The ostrich moves like the partridge, with both these advantages; and I am satisfied that those I am speaking of would have distanced the fleetest race-horses that were ever bred in England. It is true, they would not hold out so long as a horse; but, without all doubt, they would be able to perform the race in less time. I have frequently beheld this sight, which is capable of giving one an idea of the prodigious strength of an ostrich, and of showing what use it might be made of, had we but the method of breaking it and managing it as we do a horse."

The foot of the ostrich is not a little remarkable. It is divided into two toes only, and each toe, well padded beneath, is armed at the extremity with what may properly be called a hoof. The whole strongly resembles the foot of the camel.

Another point of resemblance between the quadruped and the bird may also be mentioned. The camel has a callous naked protuberance on the chest, on which, when reposing, the animal throws a great portion of the weight of the body. This protuberance occurs in the ostrich.

The flesh of the ostrich, when young, is good and palatable, and the eggs are considered a great delicacy. Both Europeans and natives agree in this last opinion. The Hottentot, who abstracts the egg from the nest with a long stick, that the hen may not take alarm at the human touch, and not abandon the nest, but go on laying, as the common hen will do to a great extent when her nest is robbed, buries them in hot ashes. They are said to be excellent when eaten with a sufficient quantity of butter. The brains of hundreds of these birds not unfrequently made a dish at the insane Roman suppers; and Firmus is said to have eaten a whole ostrich at a meal. The flesh of this bird was prohibited by the Mosaical law as unclean, and the Arabs regard it in the same light; but many of the barbarous tribes in the interior of Africa feed on it without scruple. The well-known plumes form a material article of commerce for the head-dresses of European ladies, &c.

THE NANDU.*

Such is the name given to what has also been termed the South American ostrich. It is especially plentiful in the neighbourhood of the lake Nahuelguapi, in the valley of the Andes. It is a voracious feeder, devouring everything indiscriminately like the ostrich; fruits and vegetables are its ordinary diet, but it catches flies, of which it is very fond, with peculiar address.

"This bird," says Mr. Darwin, "is well known to abound on the plains of La Plata. To the north it is found, according to Azara, in Paraguay, where, however, it is not common; to the south, its limit appears to be from 42° to 43°. It has not crossed the Cordillera; but I have seen it within the first range of mountains on the Uspallata plain, elevated between six and seven thousand feet. The ordinary habits of the ostrich are well known. They feed on vegetable matter, such as roots and grass; but at Bahia Blanca I have repeatedly seen three or four come down at low water to the extensive mud-banks, which are then dry, for the sake, as the Guachos say, of catching small fish. Although the ostrich in its habits is so shy, wary, and solitary, and although so fleet in its pace, it falls a prey, without much difficulty, to the Indian or Guacho armed with the bolas. When several horsemen appear in a semicircle it becomes confounded, and does not know which way to escape. They generally prefer running against the wind; yet, at the first start, they expand their wings, and, like a vessel, make all sail. On one fine hot day I saw several ostriches enter a bed of tall rushes, where they squatted, concealed, till quite closely approached."

The nandu stands about five feet five inches, or rather more, in its natural attitude; its general colour is a grayish brown, intermingled with black, but lighter below. The base of the neck is encircled by black, which passes on the breast into a semi-lunar mark, pointing to each shoulder. The plumes of the wings are long and slender, and those answering to quill-feathers are white. Though the bird has been rare in Europe, the plumes have been largely imported as an article of commerce; they are fixed at the end of a handle, and used as dusting-brushes for trifling purposes. The female is smaller than the male, and of a lighter colour.

On the borders of the river La Plata the nandu is hunted by horsemen, who capture or kill it with bolas, or thongs of leather, with stones attached to the ends, and which are very effective weapons. So great, however, is the fleetness of the nandu, that it cannot easily be overtaken. "One day," says Mr. Darwin (see "Narrative of the Surveying Voyages of his Majesty's ships Adventure and Beagle," Journal, vol. iii.), "I went out hunting, at Bahia Blanca: the men rode in a crescent, each being about a quarter of a mile from the other; a fine male ostrich (*rhea*) being turned by the headmost riders, tried to escape on one side. The Guachos pursued at a reckless pace, twisting their horses about with the most admirable command, and each man whirling the balls round his head. At length the foremost threw them revolving through the air; in an instant the ostrich rolled over, its legs fairly lashed together by the thong."

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* Rhea Americana. Tem.

"When hunted by the Guachos, to whom, fleet and wary as it is, it often falls a prey, the nandu expands its plumed wings, and, as if making sail, scours along, generally running against the wind." To this Mr. Darwin adds the following singular fact, which no one would have surmised, namely, that these birds are capable of swimming. "It is not generally known that ostriches (nandus) readily take to the water. Mr. King informs me, that at the Bay of San Blast, and at Port Valdes in Patagonia, he saw these birds swimming several times from island to island; they ran into the water, both when driven down to a point, and likewise of their own accord when not frightened; the distance crossed was about two hundred yards. When swimming, very little of their bodies appears above water, and their necks are extended a little forward. Their progress is slow. On two occasions, I saw some ostriches swimming across the Santa Cruz river, where it was about four hundred yards wide, and the stream rapid." It may here be added, that the emu of New Holland, though not an aquatic bird, swims well. It has been observed by Captain Sturt crossing the Murrumbidgee river. Whether the African ostrich or the cassowary of Java ever enter the water is not known; with respect to the latter, however, a similar habit is by no means improbable. The male rhea is readily to be distinguished from the females by his large size and darker colouring. The noise he makes is a deep-toned hiss, which, when Mr. Darwin first heard it, he fancied was uttered by some "wild beast;" "for it is a sound that one cannot tell whence it comes, or how far distant."

As is the case with the ostrich, several females lay in one nest; the number of eggs deposited altogether varying from twenty to forty or fifty—Azara says, even seventy or eighty. Each female lays about seventeen eggs. It is well ascertained, that the male emu alone undertakes the work of incubation. In the instance of the rhea, the same curious fact occurs; the male assiduously broods over the nest, hatches the eggs, and for some time afterwards accompanies the young. "When we were at Bahia Blanca," says Mr. Darwin, "in the months of September and October, the eggs (of the rhea), in extraordinary numbers, were found all over the country. They either lie scattered single, in which case they are never hatched, and are called by the Spaniards *huachos*, or they are collected together in a shallow excavation, which forms the nest. Out of the four nests which I saw, three contained twenty-two eggs each, and the fourth twenty-seven. In one day's hunting on horseback, sixty-four eggs were found; forty-four of these were in two nests, and the remaining twenty scattered huachos." The circumstance of the female rhea thus scattering her eggs, instead of depositing them all together, is very remarkable. "It appears odd," Mr. Darwin observes, "that so many should be wasted: does it not arise from the difficulty of several females associating together, and persuading an old cock to undertake the office of incubation? It is evident that there must be, at first, some degree of association between at least two females; otherwise the eggs would remain scattered over the wide plains, at distances far too great to allow of the males collecting them into one nest Some have believed that the scattered eggs were deposited for the young birds to feed on. This can hardly be the case in America, because the huachos, though often found addled and putrid, are generally whole." May it not be probable, we would ask, that to a similar practice, that is, of scattering her eggs, in the case of the African ostrich, the often-quoted passage in the book of Job may refer, and which appears to be contradictory to the well-established fact, that the eggs in the nest are carefully tended by both the males and the females of the associated party?

THE PATAGONIAN RHEA.*

In Southern Patagonia a distinct species of rhea exists, *Rhea Darwinii*, which Gould first described (from a specimen brought home by Mr. Darwin) at the scientific meeting of the Zoological Society, March 14, 1837. It is much less than the common rhea; the bill is shorter than the head, and the tarsi, instead of being broadly scaled in front, are covered with scaly reticulations. The tarsi, moreover, are plumed for several inches below the knee; the wings are more fully feathered, the plumes being broader, and terminated by a band of white.

It is to the discoverer of this species, Mr. Darwin, that we altogether owe our knowledge of its habits. "When at Rio Negro, or Northern Patagonia," he writes, "I repeatedly heard the Guachos talking of a very rare bird, which they called *avestruz petise*. They described it as being less than their common ostrich, which is there abundant, but with a very close general resemblance. They said its colour was dark and mottled, and that its legs were shorter and feathered lower down than those of the common ostrich. It is more easily caught by the bola than the other species. The few inhabitants who had seen both kinds affirmed they could distinguish them apart from a long distance. The eggs of the small species, however, appeared more generally known, and it was remarked, with surprise, that they were very little less than those of the common rhea, but of a slightly distinct form, and with a tinge of pale blue. Some eggs picked up on the plains of Patagonia agree pretty well with this description, and I do not doubt are those of the petise. This species occurs most rarely on the plains bordering the Rio Negro, but about a degree and a half further south they are tolerably abundant. One Guacho, however, said he distinctly recollected having seen one, many years before, near the mouth of the Rio Colorado, which is to the north of the Rio Negro. They are said to prefer the plains near the sea.

"When at Port de Desire, in Patagonia, Mr. Martens shot an ostrich, and I looked at it, forgetting for the moment, in a most unaccountable manner, the whole subject of the petises, and thought it was a two-third grown one of the common sort. The bird was cooked and eaten before my memory returned. Fortunately the head, neck, legs, wings, many of the larger feathers, and a large part of the skin, had been preserved. From these a very nearly perfect specimen has been put together, and is now exhibited in the museum of the Zoological Society." It is from this specimen, unique in Europe, that the description referred to is taken.

"Among the Patagonian Indians, in the Strait of Magellan, we found a half-bred Indian, who had lived some years with the tribe, but who had been born in the northern provinces. I asked him if he had ever heard of the avestruz petise. He answered by saying, 'Why, there are none others in these southern countries.' He informed me that the number of eggs in the nest of the petise is considerably less than with the other kind, namely, not more than fifteen on an average; but he asserted that more than one female deposited them."

The petise is more shy and wary than the common rhea, and distinguishes the horsemen at a great distance. In ascending the river at Santa Cruz few were seen, but more when the party returned, rapidly descending the current. They were either in pairs or in small parties of four or five. When disturbed, and preparing to run, this species does not, like the other, expand its wing-plumes; it, however, takes as readily to the water, and swims with equal facility. The petise was seen by Wallis at Batchelor's river, in the Strait of Magellan. Dobrizhoffer, in his account of the Abipones (1749), also notices it, and distinguishes between it and the common rhea. "Those," he says, meaning the latter, "which inhabit the plains of Buenos Ayres and Tucuman, are larger, and have black, white, and gray feathers; those, the petises, near the Strait of Magellan, are smaller and more beautiful; for their white feathers are tipped with black at the extremity, and their black ones, in like manner, terminate in white." M. D'Orbigny heard of the petise, and endeavoured, though without success, to procure specimens while at Rio Negro. To Mr. Darwin is due the merit of its introduction to science, and all definite details concerning it.

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* Rhea Darwinii. Gould.

THE EMEU.*

The Emeu seems to have been unknown in Europe until the sixteenth century, when the Dutch, on their return from their first voyage to India, brought one from the island of Java. This bird was given them by the reigning prince. For a considerable time it was exhibited at Amsterdam for money; it was then sold to the Count de Solms, who gave it to the Elector of Cologne; and by him it was presented to the Emperor of Germany. In the course of the ensuing six years, the Dutch merchants shipped two others from the same place, but both of these died on the voyage. In the year 1671, an emeu was sent by the governor of Madagascar to the King of France, which was kept alive for four years in the royal menagerie at Versailles. Since that period these birds have been frequently brought into Europe, and as they bear its climate well, they are to be found in various places.

The head of the emeu is surmounted with a bony prominence, covered with a horny substance; the skin of the head and the upper part of the neck are naked, and tinged with cærulean blue and flame-colour; the bird has pendent wattles, like those of the turkey-cock; the wings are furnished with some stiff featherless quills; and the nail of the internal toe is much the strongest. "It is," says Cuvier, "the largest of the birds after the ostrich, from which it differs sufficiently in its anatomy, for it has short intestines and small cœca, wants the intermediate stomach between the crop and the gizzard, and its cloaca does not exceed that of other birds in proportion." Its height when erect is about five feet.

This species is characterised by Lesson as "stupid and massive;" and he says it feeds on seeds and herbage. Bontius considers that it ought not to be classed among birds, because the wings it has are calculated to aid in running, not in flight. He states, that when irritated, the bird does not rush forward to the attack, but turns itself obliquely, kicking backwards at the enemy. Cuvier observes, that the featherless quills serve the emeu for offensive weapons. Bontius remarks, that the eggs are very different from those of the ostrich, by reason of their thinness and colour; for their shell is greenish, ornamented with numerous tubercles of a deeper green.

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* Casuarius Emeu.

The emeu is found in the peninsula of Malacca, and the great chain of islands to the south and east. Bontius notes it from Ceram and the other neighbouring Molucca islands. And, according to Lesson, it is very common in the islands of the Asiatic Archipelago, and especially at New Guinea. Cuvier relates that the bird lays a small number of green eggs, which it abandons, like the ostrich, to the heat of the climate.

THE CASSOWARY.*

This bird is stated by travellers to attain a height of more than seven feet, and its average in captivity may be estimated at between five and six. In form it closely resembles the ostrich, but is lower in the legs, shorter in the neck, and of a more thickset and clumsy make. At a distance, its feathers have more the appearance of hair than of plumage.

In a state of nature, this bird is very fleet, and affords much sport in coursing with dogs, which are, however, shy of their game, in consequence of the painful kicks which the bird can inflict. So powerful are they, according to the settlers, that the bird can break a man's leg by striking out with its feet. Well-trained dogs, therefore, to avoid this infliction, run up abreast, and make a sudden spring at the neck of the bird.

Though the cassowary has bred so frequently in captivity, the mode of making the nest in the wild state does not appear to be well known. It is generally supposed to be a mere hollow excavated in the earth. The dark green eggs are six or seven in number. The birds appear to be tolerably constant in pairing, and the male bird sits and hatches the young, whilst the female watches and guards the nest.

These birds will take water. Captain Sturt, when descending the Murrumbidgee, in Australia, saw two of them in the act of swimming. They appear to be gregarious, and not very shy in some localities. Major Mitchell, in his excursion towards Port Phillip, found them very numerous on the open downs, and their curiosity brought them to stare at the horses of the party, apparently unconscious of the presence of the riders. In one flock he counted thirty-nine, and they came so near, that the traveller, having no rifle with him, discharged a pistol at them, but without effect.

The body of the cassowary is very heavy; and its wings are so short that it has no power to raise itself from the ground in flight. The quills of which the wings are composed are five in number; they are strong, distinct from each other, and without barbs. The beak is about five inches long, of a very hard substance, and somewhat curved. There is a bony protuberance, covered with horn, and of a blackish-brown colour, on the top of the head. The skin of the head and neck is entirely naked; it is of a fine blue colour above and red below. On each side of the front of the neck hangs a long light blue wattle. The body is covered with black feathers, which, at a little distance, appear like hairs. So long are those on the hinder part of the back, that they entirely conceal the tail. The thighs are covered with feathers almost to the knees. The legs are remarkably stout; the toes of each foot are only three in number; and the nail of each internal toe is about twice the length of any of the others.

A cassowary that was kept, some years ago, in the menagerie at Paris, devoured every day between three and four pounds weight of bread, six or seven apples, and a bunch of carrots. All its food was swallowed without being bruised. In summer it drank about four pints of water in the day, and in winter somewhat more.

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* Dromaius Novæ Hollandiæ.

This bird was sometimes ill-tempered and mischievous. It was greatly irritated when any person approached it dressed in red clothes, or of a dirty and ragged appearance; and it frequently attempted to strike them by kicking forwards with one of its feet. It has been known even to leap out of its inclosure, and to tear the legs of a man with its claws.

A cassowary, at the same time, in Exeter 'Change, could not be regarded as an ill-tempered bird. It was driven many times out of its cage, every day, by its keeper, for the inspection of visitors. It ran without any apparent concern, for some time, about the room, and allowed even strangers to handle it without any resistance; and after a while it returned quietly to its cage.

Ordinarily this bird appears to be dull; and its disagreeable voice and hard black flesh offer no compensation for the cost of rearing and supporting it. The wild cassowary feeds on fruits, tender roots, and occasionally on the young of small animals. The tame ones which have appeared in our zoological gardens are fed not only on fruits but on bread, of which each one receives about four pounds a day.

These birds run very swiftly, and often outstrip the fleetest horses. They resist dogs by dealing them very severe blows with their feet. The male bird generally leaves his mate to the cares of incubation, which are required only at night; for, during the day, the three grayish eggs, spotted with green, are exposed to the vivifying heat of the sun, being slightly covered with sand in the hole where they were laid. In captivity, their incubation lasts eight and twenty days.

There appears to be but little difference in colour between the two sexes; but the young, on first quitting the shell, have a much more elegant livery. A brood of these birds was hatched, some years ago, in the Zoological Gardens in the Regent's Park. Their ground colour was grayish-white, marked with two longitudinal broad black stripes along the back, and two similar ones on either side, each subdivided by a narrow middle line of white. These stripes were continued along the neck without subdivision, and were broken on the head into irregular spots. Two other broken stripes passed down the fore part of the neck and breast, and terminated in a broad band passing on either side across the thighs. The bill and legs were of a dusky hue, as in the fully-grown bird. The young bird has not the helmet of the adults, and his plumes are of a light red colour, mixed with gray.

THE APTERIX.[*]

This is an exceedingly curious bird. In 1812, Captain Barclay, of the ship "Providence," brought a specimen from New Zealand, and presented it to Dr. Shaw. On the death of that eminent man it came into possession of the late Earl of Derby, the president of the Zoological Society of London, distinguished for his munificent patronage of zoology, and for his beautiful and valuable collection, both of living animals and preserved birds. A specimen has lately been added to the gardens of the Zoological Society.

Though the Apterix has no wings, yet there are small members growing out of the part of the body from which the wings of birds arise. The feathers are soft and flexible, and furnished with extremely fine hair, so that the covering of the Apterix has, at a distance, exactly the appearance of coarse fur.

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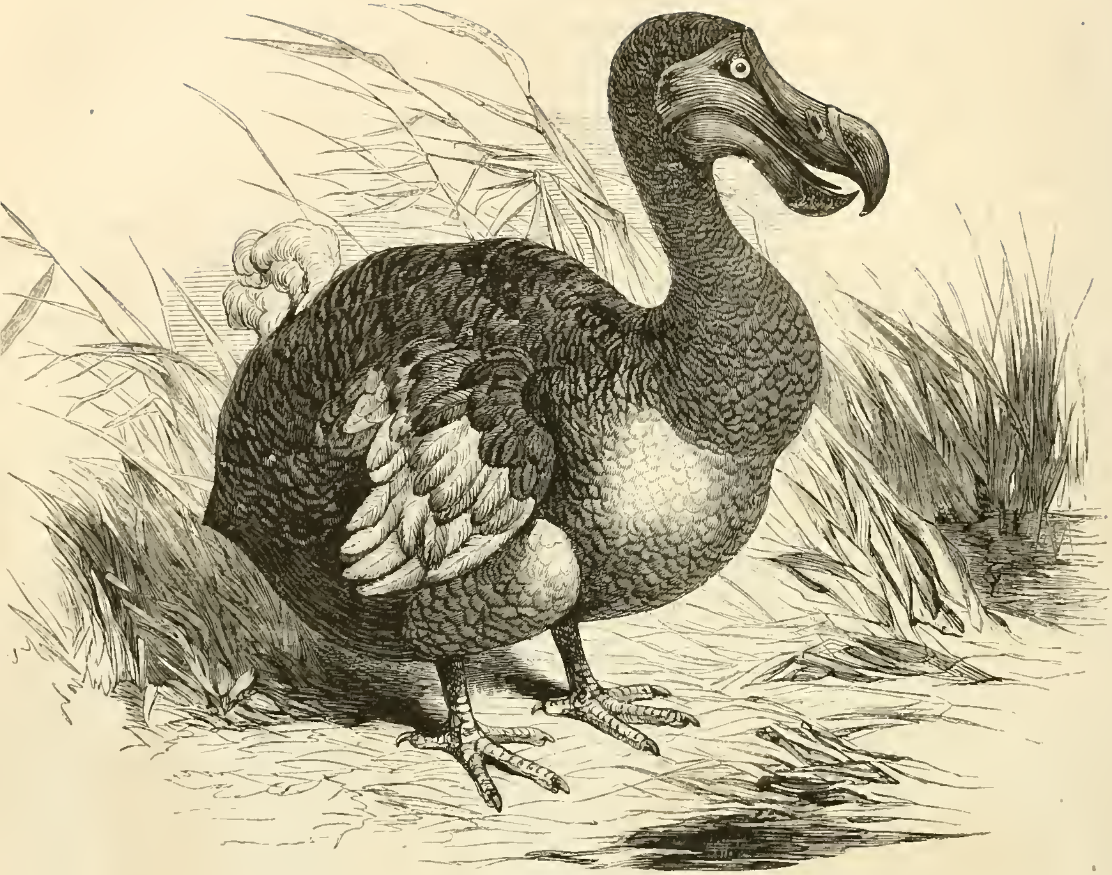
[*] Dromiceius Novæ Zealandiæ. An engraving of this bird will be found at page 61.

The length from the point of the bill to the end of the tail-less body is about thirty-two inches: but the bill varies greatly in length, and it is supposed that the female has the longer bill. It appears that worms, insects, and probably snails, are the food of this species.

Mr. Gould has become acquainted with several specimens of this bird. He states that its favourite localities are those covered with extensive and dense beds of fern, amongst which it conceals itself, and when hard pursued by dogs, the usual mode of chasing it, it takes refuge in the crevices of rocks, hollow trees, and the deep holes which it excavates in the ground in the form of a chamber. In these latter situations it is said to construct its nest of dried ferns and grasses, and there deposits its eggs.

This bird is called "Kiwi" by the natives of New Zealand, who hunt it for the sake of its flesh, of which they are extremely fond. Until the approach of night it buries itself in the recesses of the forests, and then ventures forth, in couples, in search of food, which they discover in darkness with the greatest ease. The cry of this bird resembles the sound of a whistle, and it is by imitating this that the hunters are able to take it. Sometimes it is chased by dogs, and at others secured by suddenly coming upon it with a lighted torch, when it makes no attempt at flight.



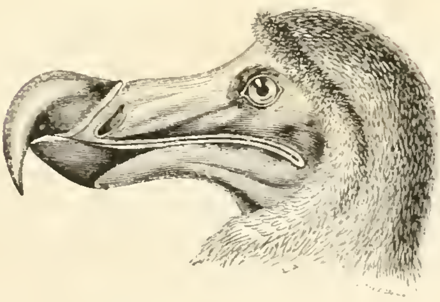
THE DODO.

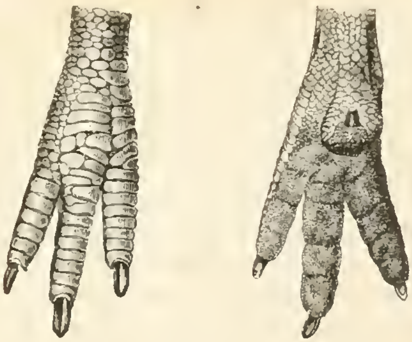
The visitors of the British Museum were, some years ago, accustomed to glance at the representation of a bird, the gift of Mr. George Edwards, which he thus describes :—"The original picture, from which this print of the dodo is engraved, was drawn in Holland, from the living bird, brought from St. Maurice's Island, in the East Indies, by the way of the Cape of Good Hope. This picture was the property of the late Sir Hans Sloane to the time of his death ; and afterwards becoming my property, I deposited it in the British Museum, as a great curiosity. The above history of the picture I had from Sir Hans Sloane, and the late Dr. Mortimer, secretary of the Royal Society."

Were this the only evidence that could be adduced, it would be more easy to suppose that the artist had invented the picture, than that a species of birds should have become extinct in so short a space of time. But there are three other representations of the dodo in very early printed books ; and they are evidently not copied from one another, though they all agree in representing the animal with a sort of hood on the head, the eye placed in a bare skin extending to the beak, the curved and swelling neck, the short heavy body, the small wings, the stumpy legs and diverted claws, and the tuft of rump feathers.

The first appears in a Latin work by Clusius, printed in 1605. He says it was taken from a rough sketch in the journal of a Dutch voyager, who had observed the bird in a voyage to the Moluccas, in 1598 ; and that he himself had seen at Leyden a leg of the dodo, brought from the Mauritius.

About thirty years after, Hubert thus describes the bird in his "Travels :"—"The dodo comes first to our description, here, and in Dygarrois; (and nowhere else, that ever I could see or hear of, is generated the dodo.) (A Portuguese name it is, and has reference to her simpleness) a bird which for shape and rareness might be called a Phœnix (wer't in Arabia); her body is round and extreame fat, her slow pace begets that corpulencie; few of them weigh less than fifty pound: better to the eye than the stomak: greasy appetites might, perhaps, commend them, but to the indifferently curious nourishment but proves offensive. Let's take her picture: her visage darts forth melancholy, as sensible of nature's injurie in framing so great and massive a body to be directed by such small and complementall wings, as are unable to poise her from the ground, serving only to prove her a bird; which otherwise might be doubted of; her head is variously drest, the one halfe hooded with downy blackish feathers; the other, perfectly naked; of a whitish hue, as if a transparent lawne had covered it; her bill is very hooked, and bends downwards; the thrill, or breathing place, is in the midst of it; from which part to the end, the colour is a light green, mixt with a pale yellow; her eyes be round and small, and bright as diamonds; her cloathing is of finest downe, such as you see in goslins; her trayne is (like a China beard) of three or four short feathers; her legs thick, and black, and strong; her tallons or pouncers sharp, her stomak fiery hot, so as stones and iron are easily digested in it; and in that shape, not a little resembling the Africk Ostriches: but so much, as for their more certain difference, I dare to give thee (with two others) her representation."


HEAD OF THE DODO.


FRONT AND BACK VIEW OF THE FOOT OF THE DODO.

There are several details in this description, such as the digestive powers of the stomach, which are doubtless inaccurate; but the more important particulars entirely accord with other evidence.

The third representation of the dodo appeared in "Willughby's Ornithology," edited by our great naturalist, John Ray, who says :—"We have seen this bird dried, or its skin stuffed, in Tradescant's cabinet." The Tradescant, to whom he refers, was a person who had a very curious museum at Lambeth. In the printed catalogue of his collection there is the following item: "Sect. 5. *Whole Birds.* Doddo, from the island Mauritius; it is not able to fly, being so big." The specimen afterwards passed into the Ashmolean Museum at Oxford, but, having become decayed, it was destroyed in 1755. A beak and leg are, however, still preserved in that establishment; and there is also a foot in the British Museum, which was formerly in the Museum of the Royal Society.

The following is Willughby's translation of Clusius, and the section is thus headed :—"The Dodo: called by Clusius *Gallus gallinaceus peregrinus;* by Nieremberg, *Cygnus cucullatus;* by Bontius, *Droutè.* This exotic bird, found by the Hollanders in the island called Cygnaea, or Cerne (that is, the Swan Island) by the Portuguese, Mauritius Island by the Low Dutch, of thirty miles' compass, famous especially for black ebony, did equal or exceed a swan in bigness, but was of a far different shape; for its head was great, covered, as it were, with a certain membrane resembling a hood; beside, its bill was not flat and broad, but thick and long, of a yellowish colour next the head, the point being black. The upper chap was hooked; in the nether was a bluish spot in the middle between the yellow and black part. They reported that it is covered with thin and short feathers, and wants wings, instead whereof it hath only four or five long black feathers; that the hinder part of the body is very fat and fleshy, wherein for the tail were four or five small curled feathers, twirled up together, of an ash colour. Its legs are thick rather than long, whose upper part, as far as the knee, is covered with black feathers; the lower part, together with the feet, of a yellowish colour; its feet divided into four toes, three (and those the longer) standing forward, the fourth and shortest backward, all furnished with black claws. After I had composed and written down the history of this bird with as much diligence and faithfulness as I could, I happened to see in the house of Peter Pauwins, primary professor of physic in the university of Leyden, a leg thereof cut off at the knee, lately brought over out of Mauritius, his island. It was not very long, from the knee to the bending of the foot being but little more than four inches, but of a great thickness, so that it was almost four inches in compass, and covered with thickset scales, on the upper side broader, and of a yellowish colour, on the under (or back side of the leg) lesser and dusky. The upper side of the toes was also covered with broad scales, the under side wholly callous. The toes were short for so thick a leg; for the length of the greatest or middlemost toe to the nail did not much exceed two inches, that of the other toe next to it scarce came up to two inches; the back toe fell something short of an inch and a half; but the claws of all were thick, hard, black, less than an inch long; but that of the back toe longer than the rest, exceeding an inch.* The mariners, in their dialect, gave this bird the name *Walgh-Vögel*, that is, nauseous or yellowish † bird; partly because after long boiling its flesh became not tender, but continued hard and of a difficult concoction, excepting the breast and gizzard, which they found to be of no bad relish; partly because they could easily get many *turtle-doves*, which were much more delicate and pleasant to the palate. Wherefore it was no wonder that in comparison with those they despised this, and said they could well be content without it. Moreover, they said that they found certain stones in its gizzard, *and no wonder, for all other birds, as well as these, swallow stones, to assist them in grinding their meat*. Thus far Clusius."

Mr. Vigors, in his paper on "The Natural Affinities that connect the Orders and Families of Birds," thus writes on the subject of the dodo:—"Considerable doubts have arisen as to the present existence of the Linnæan *Didus*; and they have been increased by the consideration of the numberless opportunities that have latterly occurred of ascertaining the existence of these birds in those situations, the isles of Mauritius and Bourbon, where they were originally alleged to have been found. That they once existed, I believe, cannot be questioned. Besides the descriptions given by voyagers of undoubted authority, the relics of a specimen preserved in the public repository of this country, bear decisive record of the fact. The most probable supposition that we can form on the subject is, that the race has become extinct in the before-mentioned islands, in consequence of the value of the bird as an article of food to the earlier settlers, and its incapability of escaping from pursuit. This conjecture is strengthened by the consideration of the gradual decrease of a nearly conterminous group, the *Otis Tarda* of our British ornithology, which, from similar causes, we have every reason to suspect, will shortly be lost to this country. We may, however, still entertain some hopes that the *Didus* may be recovered in the south-eastern part of that vast continent, hitherto so little explored, which adjoins those islands; and whence, indeed, it seems to have been originally imported into them. I dwell upon these circumstances with more particularity, as the disappearance of this group gives us some grounds for asserting, that many chasms which occur in the chain of affinities throughout nature may be accounted for on the supposition of a similar extinction of a connecting species. Here we have an instance of the former existence of a species that, as far as we can now conclude, is no longer to be found; while the link which is supplied in nature was of considerable importance. The bird in question, from every account which we have of its economy, and from the appearance of its head and foot, is decidedly gallinaceous; and from the insufficiency of its wings for the purposes of flight, it may with equal certainty be pronounced to be of the *struthious* structure, and referable to the present family. But the foot has a strong hind toe, and, with the exception of its being more robust—in which character it still adheres to the *Struthionidæ*—it corresponds exactly with the foot of the Linnæan genus *Crax*, that commences the succeeding family. The bird thus becomes osculant, and forms a strong point of junction between these two conterminous groups; which, though evidently approaching each other in general points of similitude, would not exhibit that intimate bond of connexion which we have seen to prevail almost uniformly throughout the neighbouring subdivisions of nature, were it not for the intervention of this important genus."

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* We are indebted to Mr. Gray for the following measurement of the foot in the British Museum:—"Knee to ancle, four and a-half inches; circumference, four inches; middle toe, three inches; back toe, one and a half inches; front claws, which are much worn, eight lines; back claw, also much worn, shorter." Mr. Gray observes, that the leg mentioned by Clusius is probably, from the similarity of the measurement, the specimen which was afterwards noticed by Grew, and finally came to the British Museum.

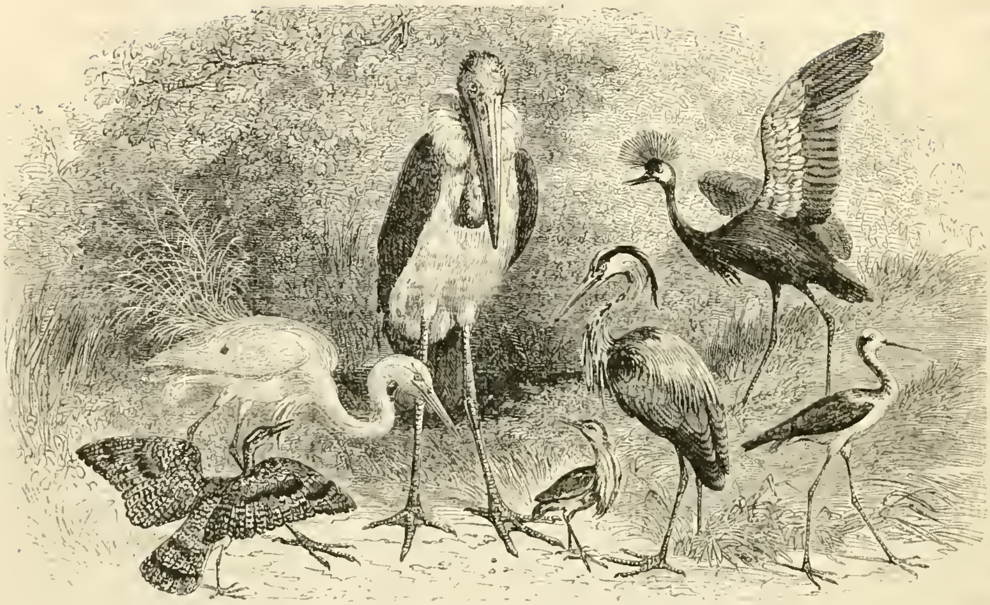
† So in Willughby; but the print is somewhat indistinct, and there may be error. In the original the words are, "*Walgh-Vögel*, hoc est nauseum movens avis, partim quod, &c." The word, therefore, is an interpolation.

Thus the existence of the dodo is placed beyond all doubt. It appears that there is a general impression among the people of the Mauritius, that this bird did exist at Rodriguez as well as in the Mauritius itself; but the oldest inhabitants never saw it, nor has a single specimen been preserved by them.

With this bird we conclude our account of the GALLINÆ, often called the RASORES, or RASORIAL BIRDS.

GRALLATORES.

ORDER V.—WADING BIRDS.



"The habits and manners of birds," says Buffon, "are not so free as might be supposed; their conduct is not the result of a freedom of will or choice, but a necessary effect derived from the conformation, the organisation, and the exercise of their physical faculties. Determined and fixed, each in the manner of life which this necessity imposes, none attempt to infringe it, and none can withdraw themselves from its influence. It is by this necessity, as varied as is the structure of animated bodies, that all the districts of Nature are peopled. The eagle quits not the rock, nor the heron the shore; the one drops from his airy height to carry off or tear the lamb, by no right but that of power, and by no means but those of violence; the other, with his feet sunk in mire, awaits, at the command of necessity, the passage of his fugitive prey. The woodpecker never abandons the trunks of trees, round which he is ordained to creep. The snipe must remain in his marshes; the lark in his furrows; the singing-birds in their groves. Do we not observe all granivorous birds search out inhabited countries, and follow the track of cultivation; while, on the contrary, those which prefer berries and wild fruits invariably shun the footsteps of man, and in the dense wood, or on the solitary mountain-steep, bide alone with Nature, which has dictated the laws they shall obey, and furnished them with the means of such obedience? She it is who retains the wood-hen beneath the thick foliage of the fir-tree; the solitary blackbird (*turdus cyaneus*) in the rock; the loriot in the forest, that re-echoes to his cries; while the bustard haunts the dry fallow land, and the rail the humid meadow. These are the eternal, immutable decrees of Nature, as permanent as the forms of her productions. These are her grand and rightful properties, which she never yields nor abandons, even in things which we imagine we have ourselves appropriated altogether; for, let us have acquired them how we may, they are not the less under her dominion. Has she not, for example, quartered upon us such troublesome guests as the rat in our houses, the swallow under our windows, and the sparrow beneath our roofs? And when she calls the stork to the summit of the ruined tower, within whose walls the night-bird has already taken up his abode, does she not seem hastening to resume the possessions which we have usurped for a period, but which she has commissioned the resistless hand of Time to restore to her domain?"

In this enumeration, Buffon has included some of the Wading Birds, which strikingly illustrate the observations he makes. The structure and general conformation of this great family admirably adapt them to the local situation appointed for them, and the nature of their food. The woods, the hills, and the verdant plains are not their portion, neither is the sea, nor the larger rivers and lakes, on the surface of which, far away from the shore, so many revel in a congenial element; but theirs are the swamp, and the morass, and the low and oozy lands which border the sea and its petty creeks and inlets. Here they find their food, which consists of the smaller fishes, reptiles, snails, insects, and water-plants. Their legs are accordingly of great length, the thighs often bare of feathers for a considerable distance, and the toes either long and spreading, or partially webbed; many, if necessity requires, can swim, and some few swim and dive with great dexterity.

In proportion to the length of their legs is that of the neck, or at least generally so; and where the neck does not bear a due relative proportion, its length is usually made up by that of the beak; but in many, as the stork or the heron, we find both the neck and the beak equally elongated. In the structure of the beak the wading birds offer much variety, according to the particular nature of the food to be obtained. In many it is long, powerful, and pointed; in others, broad and rounded; and again, in others soft and pulpy at the tip, and supplied with nerves, so as to perform the office of a feeler when inserted into the oozy mud in search of minute insects or seeds. Thus the heron, the spoonbill, the oyster-catcher, and the woodcock, afford examples by way of contrast, in each of which we find this organ so modified as to be consonant to the nature and habits of its possessor.

The order *Grallatores* is very extensive, and includes a vast assemblage of subordinate groups. Besides those on the border-line, it comprehends cranes, storks, herons, ibises, plovers, snipes, sandpipers, and very many more. Our limits will therefore allow only of a general outline, illustrated by some of the best examples, that the main and distinguishing features of the whole may be clearly understood.

Nor should it be overlooked, that whatever attraction these birds may present to the scientific ornithologist, they are highly interesting to all who love the study of nature. The very place they occupy is peculiarly worthy of consideration, as here we may obtain a distinct view of the system that prevails throughout the regions of animated beings. For here may be observed birds which link together the Grallatores with some of the Gallinæ, while others are united with the *Natatores*, the Swimming Order of birds, which we shall subsequently contemplate. Of the former, the first bird now to be described will furnish an example.

THE AGAMI, OR GOLDEN-BREASTED TRUMPETER.*

This bird, a native of South America, suggests to us, as we contemplate it, its natural alliances with the ostrich, from the height of its legs and the length of its neck. It is found in large flocks, which do not seem to visit the marsh or the fen, but to seek in preference upland forests and mountains. Like the ostrich, its speed is very great; it seldom takes to wing; and even when to do so is absolutely necessary, it rises but little from the surface of the earth.

The position of the agami has varied with the opinions of different ornithologists. It was classed by Pallas among cranes; by Brisson among pheasants; and it makes the first genus in Temminck's *Alectorides*. It is the size of a large fowl or pheasant, its length being twenty-two inches, but it appears larger from the length of its neck, and also, from standing so high on its legs.

This bird slightly resembles the pheasant in the glossy iridiscent green on the breast, and in a space round the eyes destitute of feathers; but it has a very short tail, consisting of twelve black feathers, over which the long, loose, scapulary rump-plumes hang droopingly. Its long greenish legs assimilate it to the Wading Birds, but it is said to differ from them in their habits.

HEAD OF AGAMI.

The agami is very gregarious, being found in numerous flocks, which walk and run, but rarely fly, and when they do, they seldom rise more than a few feet above the surface of the ground. They trust, even when pursued, chiefly to their speed in running.

These birds build no nest, but scratch a hollow place at the root of a tree, where the eggs are deposited. They are somewhat larger than a hen's egg, and of a rounder form; they vary from ten to sixteen in number, and are of a light-green colour. The down remains a long time on the young, and grows into long silky plumes, which are very close, like fur, and it is not till they are one-fourth the size of the adult birds that the true feathers appear.

The name of Trumpeter is derived from a hollow internal sound made by the bird without opening its bill. It is said to be produced by a peculiar structure of the windpipe, which, from being about as thick as a swan's quill, and almost bony, becomes still more slender, and loose, and cartilaginous when it enters the chest. There two semi-cylindrical canals proceed from it, which are of a membranous texture, and capable of being extended. They appear to form an air-bag, which, on the right side, descends to the pelvis, and is divided within the breast into three or four cells, by transverse membranes; while, on the left side, the air-bag is narrower. The sound resembles the cooing of a pigeon, or the syllables *too-too-too*, repeated precipitately six or seven times. While this takes place, the chest heaves as in birds while singing, though the bill contimes shut. It is produced, in fact, by the vibration of the air forced from the lungs into these air-bags, by the action of the muscles of the chest and back.

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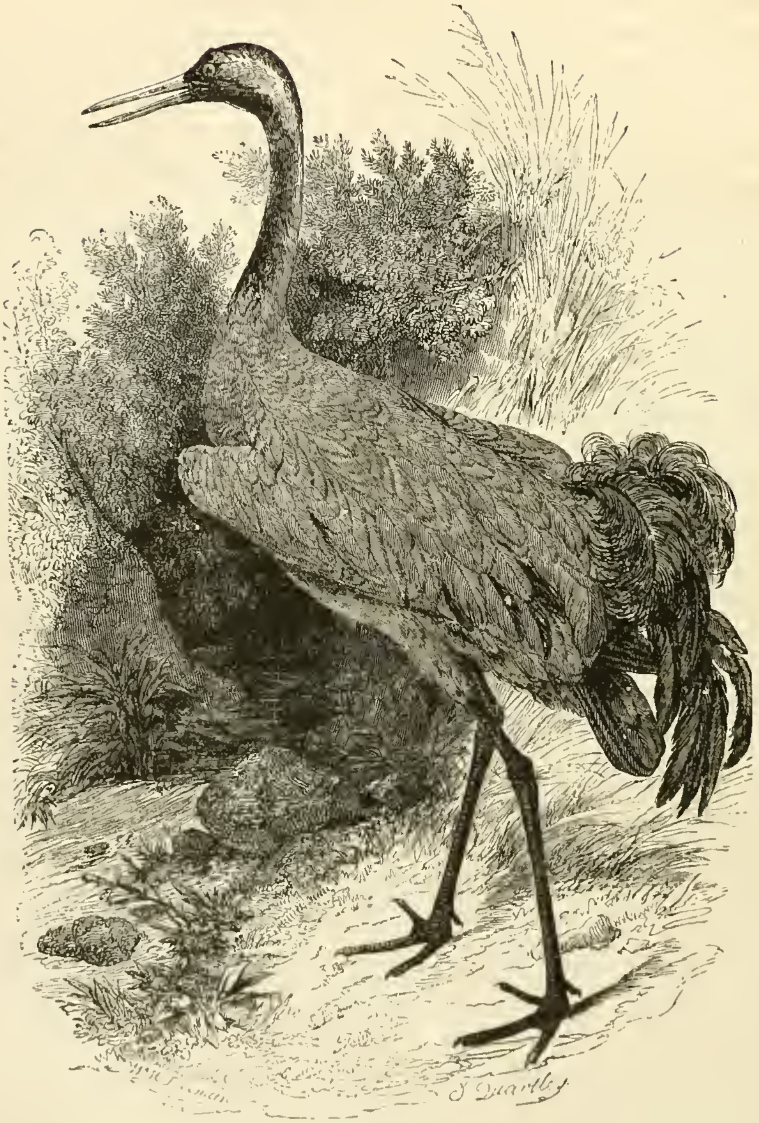
* Psophia crepitans.

The Trumpeter is often domesticated, and is extremely intelligent, bold, and familiar. "It is not only easily tamed," says Mononcour, "but becomes attached to its benefactor with all the fondness and fidelity of the dog; and of this disposition it shows the most unequivocal proofs. When bred up in the house, it loads its master with caresses, and follows his motions; and if it conceives a dislike to persons, it will pursue them sometimes to a considerable distance, biting their legs, and testifying every mark of displeasure. It obeys the voice of its master, and even answers to the call of all those to whom it bears no grudge. It is fond of caresses, and offers its head and neck to be stroked; and if once accustomed to these familiarities, it becomes troublesome, and will not be satisfied without continual fondling. It makes its appearance as often as its master sits down to table, and begins with driving out the dogs and cats, and taking possession of the room; for it is so bold and obstinate, that it never yields, and often after a tough battle can put a middle-sized dog to flight. It avoids the bites of its antagonist by rising in the air, and retaliates with violent blows with its bill and nails, aimed chiefly at the eyes; and after it gains the superiority, it pursues the victory with the utmost rancour; and if not parted, will destroy the fugitive. By its intercourse with man, its instinct becomes moulded like that of a dog; and we are assured it can be trained to tend a flock of sheep. It even shows a degree of jealousy of its rivals; for, when at table, it bites fiercely the naked legs of the negroes and other domestics who come near its master."

Though the above account of the character of the trumpeter may be considered as extravagant, and far too highly coloured, it is doubtless founded upon truth, and cannot but lead us to desire a better acquaintance with a bird which few naturalists have opportunities of observing in a state of nature.

It is stated by Dr. Latham that one of the agami, a young bird, found its way into a farm in Surrey, and there associated with the poultry. It was perfectly tame, and, on one occasion, accompanied the hounds, and kept up with them for three miles. It was afterwards in the possession of the late Earl of Derby, but died on its way into Lancashire.

THE CRANES.*



THE COMMON CRANE.†

The Common Crane is a large bird, measuring upwards of five feet in length. The plumage is, in general, ash-coloured, but the forehead is black; the sides of the head, behind the eyes, and the hind part of the neck, are white; on the upper part of the neck there is a bare ash-coloured space of two inches; and above this the skin is naked and red, with a few scattered hairs. Some parts about the wings are blackish. From the pinion of each wing springs an elegant tuft of loose feathers, curled at the ends, which can be erected at will, but which, when quiescent, hangs over and covers the tail. The legs are black.

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* Grus.

† Grus Cinerea.

This species is found in numerous flocks, in the northern parts of Europe. It is stated by Mr. Nilsson, that the crane is seen in Sweden in spring and autumn, and that it goes to the marshes of Scania to breed. Linnæus describes their appearance in Lapland, and Pennant says they also visit Russia and Siberia.

The nest of the crane is made among long herbage, reeds, and the luxuriant vegetation of swampy tracts, and sometimes on insulated ruins. Two eggs are laid, of a pale dull-greenish colour, blotched with brown. The food of this bird consists not only of grain and vegetables, but worms, frogs, and snails. Cranes are said to make great havoc in the corn when it is green.

"Part loosely wing the region; part, more wise,
In common, ranged in figure, wedge their way,
Intelligent of seasons; and set forth
Their airy caravan; high over seas
Flying, and over lands with mutual wing
Easing their flight: so steers the prudent crane
Her annual voyage, borne on winds; the air
Floats as they pass, fanned with unnumbered plumes." *

"Flocks of these birds are seen, at stated times," according to Mr. Gould, "in France and Germany, passing northwards and southwards, as the season may be, in marshalled order, high in the air, their sonorous voices distinctly heard even from their elevated course. Occasionally they descend, attracted by newly-sown fields, or the prospect of finding food in marshes, on the borders of rivers, or even the shores of the sea; but generally they continue their flight unchecked towards their destined resting-places."

The description thus given is correct; for the cranes, which fly very high, arrange themselves in the form of a triangle, the better to cleave the air. When the wind threatens and breaks their ranks, they collect their forces into a circle. Their migratory voyages are chiefly performed in the night; but their loud screams indicate their course. It is said that during these nocturnal expeditions, the leader frequently calls, in order to rally his forces and point out the track; while the cry is repeated by them, each one answering, thus showing that it follows and keeps its rank.

Kolben states, that these birds are often observed in large flocks on the marshes about the Cape of Good Hope. He never saw a flock of them on the ground, that had not some birds placed, apparently as sentinels, to keep a look-out while the others were feeding. These sentinels stand on one leg, and at intervals stretch out their necks, as if to observe that all is safe. On any notice of danger, the whole flock are instantly on the wing. It requires, however, some credulity to admit Kolben's assertion, that in the night-time each of the watching cranes, which rest on their left legs, hold in the right claw a stone of considerable weight; in order that, if overcome by sleep, the falling of the stone may awaken them!

The bill is of the length of the head, or rather longer, strong, straight, compressed, the point in the form of an elongated cone, obtuse towards the end, the lateral base of the mandible deeply channelled; the base of the bill is elevated. The nostrils are in the middle of the bill, pierced through and through in the groove, and closed backwards by the membrane. The region of the eyes and the base of the bill are often naked, or covered with warty excrescences. The feet are long and strong; there is a large naked

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* Milton.

space above the knee; there are three anterior toes, the middle one united to the external by a rudiment of a membrane, the interior toe divided, posterior toe articulated higher on the tarsus. The wings are moderate; the first quill shorter than the second, which last is nearly as long as the third, and that is the longest; the secondaries nearest to the body are arched, or very long and tubulate in some foreign species.

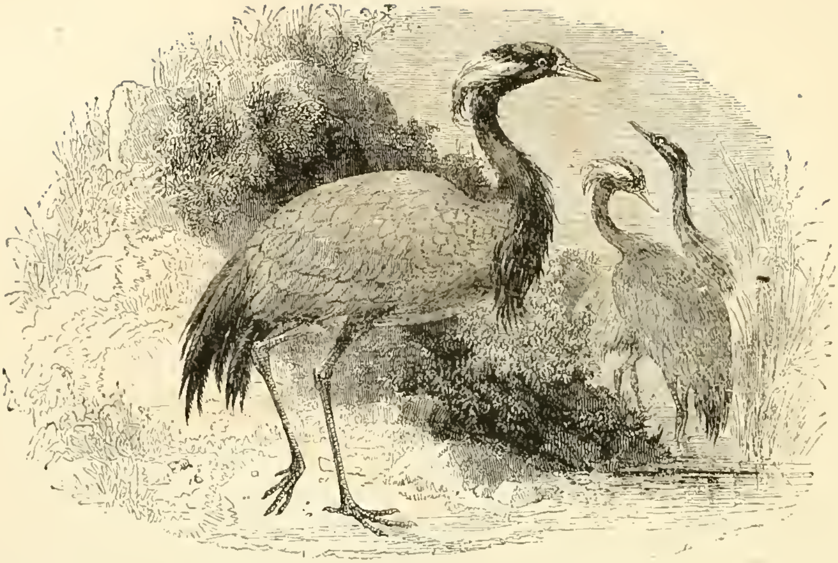
In the greater part of the species, the trachea of the male forms circumvolutions upon itself; in the other similar sinuosities occur in both sexes, which do not differ in external appearance. They moult once in the year.

Temminck states that the common crane inhabits the marshy plains of the Oriental countries; that it is common in the north, migrating regularly in spring and autumn; is rare in its passage in Holland, and only in very severe winters. Asia is one of the tracts of country much frequented by it. Dr. Von Stebold notices it in his list of birds killed in Japan. Mr. Selby states, that its equatorial migrations extend to India, Egypt, and other warm parts of Asia and Africa, but that it retires in summer to the northern and eastern parts of Europe to breed.

The Prince of Musignano notes it as very rare and accidental near Rome; Willughby, however, saw many of them in the poulterers' shops in winter. But it is in England that the alteration of the country by drainage and enclosure has caused, perhaps, the most remarkable absence of these fine birds. They were numerous in the times of our ancestors, and highly esteemed by them, both as objects of sport, and as furnishing a dish fit for the table of princes. By 25 Hen. VIII. c. II, confirmed by 3 and 4 Edw. VI. c. 7, twenty pence was the forfeiture for each egg of the crane taken and destroyed. Willughby says, "They come often to us in England; and in the fen countries in Lincolnshire and Cambridgeshire there are great flocks of them; but whether or no they breed in England (as Aldrovandus writes, he was told by a certain Englishman, who said he had often seen their young ones), I cannot certainly determine, either from my own knowledge or from the relation of any credible person." In Pennant's time he had come to the conclusion that the cranes had forsaken our island. "A single bird," says he, "was killed near Cambridge, about three years ago, and is the only instance I ever knew of the crane being seen in this island in our time." Dr. Latham mentions only four instances, as occurring within his memory, of the crane having been met with in England. Montagu and Dr. Fleming mention a small flock that visited Zetland in 1807, and Mr. Selby received information of one killed in Oxfordshire, in December, 1830. The crane can now be only regarded as an accidental and rare visitant to our islands.

Mudie justly remarks: "For popular purposes in British ornithology, it is now of little consequence to point out the relation of the crane to other birds, or to localities, for it only appears as a straggler; though, from the old statutes for the protection of its eggs, it appears to have been well known, in former times, as a native bird breeding in the country. The crane is a bird of the wastes that lie on the edges of marshes, or are subject to seasonal overflowings by rivers; and as in England those places are now generally enclosed, or otherwise divided, and under culture, the country affords no fit pasture for the crane. The crane is not, however, a bird of solitude, for in those southern and eastern countries that suit its habits, it is said to build, not only in inhabited places, but on the tops of houses."

Willughby says, 'The flesh is very savoury and well-tasted, not to say delicate;" and indeed it seems to have been highly prized in former days. Pegge says, in his "Form of Curey:" "William the Conqueror was remarkable for an immense paunch, and withal was so exact, so nice and curious in his repasts, that when his prime favourite, William Fitz Osborne, who, as dapifer or steward of his household, had the charge of the curey, served him with the flesh of a crane scarcely half roasted, the king was so highly exasperated, that he lifted up his fist, and would have struck him, had not Eudo, who was appointed dapifer immediately after, warded off the blow." At the enthronisation of George Newell, the archbishop above alluded to, 204 cranes were served; and in the "Northumberland Household-book," the price of the crane (cranys) is marked sixteen-pence. At the marriage-feasts, also above mentioned, one of the items in the first is, "9 cranes, every crane three shillings and fourpence;" and in the second we find, "item for a standert, cranes 2 of a dish," for the second course; and in the expenses we find, "Item in cranes, 9 . . £0 30s. 0d." The long drooping feathers of cranes are valuable as plumes.



THE DEMOISELLE OR NUMIDIAN CRANE.*

The elegant species, to which the name of Demoiselle was given by the French Academicians, is remarkable for its graceful symmetry of form, the tasteful disposition of its plumage, and the agreeable contrast of its lighter and darker shades of colour. It measures, when fully grown and in an upright position, about three feet six inches to the top of the head, and its length, from the point of the bill to the tip of the tail, is about three feet.

Of these measurements, the neck and legs form a very considerable proportion. The whole of the upper surface of the head is occupied by a patch of light gray; and the sides of it, together with the neck, including the long slender-pointed feathers which depend from its lower part over the breast, are of a uniform, but not very intense, shade of black. A tuft of pure white feathers passes off backwards from behind each eye. Except the outer halves of the quill-feathers of the wings and tail, the rest of the plumage is of a slaty-gray. When the wings are folded, the secondary quill-feathers form on either side of the body a tuft of dependent plumes, curving downwards. The outer halves of all the quill-feathers are of a dusky-black.

Like the cranes in general, the Demoiselle is migratory in its habits. It is a native of Africa. It extends along the Mediterranean and western coasts from Egypt to Guinea, but is most abundant in the neighbourhood of Tripoli, and throughout the neighbouring region. It arrives in Egypt in considerable numbers, at the time of the inundation of the Nile, and appears in Constantinople in the month of October, being then probably on its passage from the Black Sea towards the south. It is also stated to have been met with at the Cape of Good Hope, and in the interior of Africa.

This beautiful bird has frequently been brought into England, the climate of which it bears extremely well. It soon becomes familiarised. Several fine specimens are in the Gardens of the Zoological Society. In France it has bred in captivity, some of the young birds live for twenty-four years.

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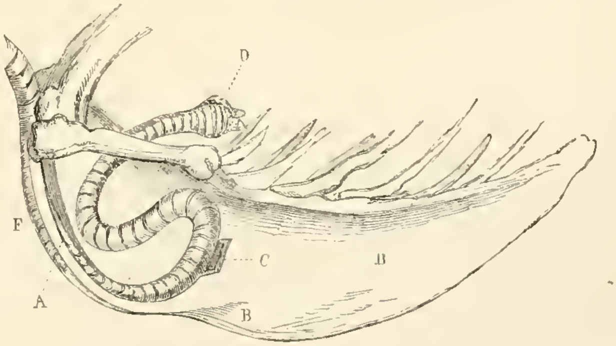
* Anthropoides Virgo.—Vieill.

THE CROWNED CRANE.*

This bird is considerably larger than the Demoiselle Crane, and though less graceful in form and attitude, it is far more elegant in the varied colours of its plumage. It measures, when fully grown, about four feet in total height. The cheeks and temples are entirely naked, and are covered with a bright rosy red, which sometimes overspreads the whole of the naked surface, and sometimes is confined to a portion of it. A similar naked space beneath the upper part of the throat is gradually developed, and terminates in a fold of skin resembling the wattle of a turkey. A close tuft of short, smooth, even, velvety, deep-black feathers covers the fore part of the head, and behind them rises a very remarkable crest, each filament of which is twisted spirally on itself, is fringed along its edges with a series of black-pointed hairs, and terminates in a blackish pencil. The bill, legs, and feet are of a dusky-black. The iris is remarkable for being almost destitute of colour.



ORGANS OF THE DEMOISELLE CRANE.

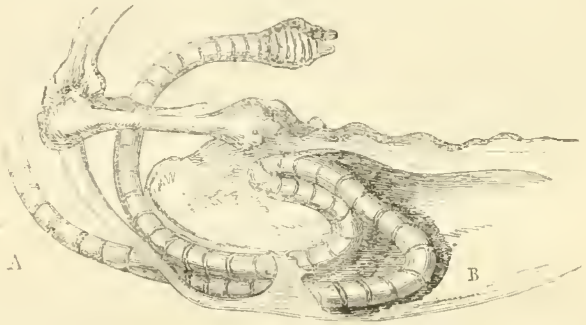
The voice of the crane—and the remark applies more or less to the whole family—may

* Ardea Pavonina.

be heard while the bird is out of sight, its being singularly loud and sonorous. The peculiarity, in this instance, consists in convolutions of the trachea before entering the chest. Thus, as the engravings will show, the trachea, instead of going directly into the chest, enters a large cavity between the two plates forming the keel of the breast bone, and is there doubly reflected before it emerges and ascends to pass into the chest.

The first represents the breast bone and trachea of the young Demoiselle Crane. Here the tube F, quitting the neck, passes between the branches of the merrythought (*furcula*), A, to the inner edge of the keel of the breast bono, B B, which is grooved to admit the fold. In this groove the fold of the trachea is bound by the cellular membrane: at the point C a small portion of the bone is sawed away to show tho depth of the groove which receives the trachea. D is the inferior larynx.

The following engraving exhibits the trachea in the common crane, running a convoluted course in a cavity in the substance of the keel of the breast bone, between the two plates comprising it, one of which is cut partially away to expose the course of the tube. In this, as in the preceding, the *furcula*, A, is not, as in most birds, a distinct bone, but is solidly united to the keel of the breast bone, B.



ORGANS OF THE COMMON CRANE.

THE BUSTARDS.

The Bustards live generally in open countries, preferring plains or extensive downs dotted with low bushes and underwood, where an enemy may be descried from far, and from whence they can run with exceeding swiftness, using their wings like the ostriches, to accelerate their course. When they do take wing their flight is low, and they skim along the ground with a sufficiently sustained and rapid flight. Their food consists of vegetables, insects, worms, grain, and seeds.

They are polygamous, one male sufficing for many females. It appears that the males in the greatest number of species differ from the females in having extraordinary ornaments, and in possessing a more variegated plumage. They are said to moult twice a year. Their massy port, and the slightly arched and vaulted upper mandible of the beak, and the little webs between the bases of their toes, recall the form of the gallinaceous birds, but in other respects, as in the nudity of tho lower part of the legs, their whole anatomy, and even the flavour of their flesh, the differences are great and decisive.

THE GREAT BUSTARD.*

The Great Bustard is found in some provinces of France and in parts of Germany and Italy. It is common in Russia, and on the extensive plains of Tartary. It is very abundant in some parts of Spain and Portugal, and it is dispersed over the more temperate parts of Africa.

Graves gives a figure of a male bird said to have been drawn from one taken alive on Salisbury Plain in 1797. Montague states that not one had been seen in that locality for two or three years prior to 1813. Another naturalist says:—"We are old enough to remember seeing one, and sometimes two, bustards as the crowning ornaments of the magnificent Christmas larder, at the Bush Inn, Bristol, in the reign of John Weeks of hospitable memory."

According to Brookes, there are bustards in France, which frequent large open plains, particularly near Chalons, where, in the winter time, there are great numbers of them seen together. There is always one placed as a sentinel, at some distance from the flock, which gives notice to the rest of any danger. They raise themselves from the ground, some assert, with great difficulty; for they run sometimes a good way, beating their wings, before they fly. In that country they are taken with a hook, baited with an apple or flesh; sometimes fowlers shoot them as they lie concealed behind some eminence, or on a load of straw; others take them with greyhounds, which often catch them before they are able to rise.

Selby, well informed on the subject, contradicts the statement of various writers as to this bird's reluctance to take wing. He says: "With respect to its habits in a wild state, it is so shy as seldom to be approached within gun-shot; invariably selecting the centre of the largest enclosure, where it walks slowly about, or stands with the head reposing backwards upon the bare part of its neck, and frequently with one leg drawn up. Upon being disturbed, so far from running in preference to flight (as has been often described), it rises upon the wing with great facility, and flies with much strength and swiftness, usually to another haunt, which will sometimes be at the distance of six or seven miles."

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* Otis Tarda.—Linn.

These observations are sustained by the testimony of an old "Booke of Falconrie," which thus describes what are called Great Flights: "There is yet another kind of flight to the fielde, called the great flight, as to the cranes, wild geese, bustard, and many other such like, and these you may flee from the fist, which is properly tearmed the source. Nevertheless, in this kind of hawking, which is called the great flight, the falcons or other hawks cannot well accomplish their flight at the cranes, bustard, or such like, unlesse they have the helpe of some spaniell, or such dogge, wel inured and taught for that purpose with your hawke. Forasmuch as great flights require pleasant ayde and assistance, yea, and that with great diligence."

The gular pouch, with which these birds are provided, is capable of containing a considerable quantity of water. Douglass supposes that the bustard fills it with water in the midst of the dreary plains in which it is accustomed to wander; and Bewick adds, that one of these birds, kept in a caravan as a show, lived without drinking. Others conjecture that this pouch is a provision for carrying water to the female during the time of incubation, and to the young. But this may be doubted, since the male is never seen in company with the female except before incubation. The fact is, that the precise purpose of this natural water-bag has not yet been ascertained.

"The Rev. Richard Lubbock sent me word," says Mr. Yarrell, "that a female bustard bred near Thetford in 1832, and carried off her young ones. This nest was upon a warren, but it is most commonly placed in rye. Mr. Elwes shot a female to a pointer, in a turnip-field at Congham, in the autumn of 1831." The continuation of these notes is as follows:—"I know one instance of a specimen killed on the contrary side of Norfolk to that which they generally affect. About ten years ago, a person returning home in the parish of Palling, upon the coast near Winterton, saw an immense bird walking in a marsh by the road-side. He rode home, brought his gun, and shot it; it proved to be a male bustard of the second year, and is now in the collection of Mr. Postle, a near relation of mine. This is exactly the opposite part of the county to that in which they are generally found. When a boy, I remember two or three individuals in a domesticated state. I recollect one of these birds swallowing, in an instant, a thin leathern glove which I dropped. The system of weeding out corn in the spring has tended, perhaps, more than any other cause, to the decrease of bustards; since egg collectors became numerous, a nest is a valuable prize indeed. A very fine bird—an old male—is still in preservation, as a stuffed specimen, at the house of a friend in my neighbourhood, which was taken by greyhounds forty years ago, within three miles of Norwich."

THE ASIATIC BUSTARD.*

Mr. Gould has given a magnificent representation of this bird, which was brought from the Highlands of the Himalaya, but it is not confined to that locality. Colonel Sykes observed it in the wide and open country of the Mahrattas, where it lives in large flocks, and is considered one of the greatest delicacies as an article of food. So abundant are they in the Deccan, that one gentleman shot nearly a thousand of these birds.

The length of the male bird of this species, inclusive of tail, is 56½ inches. The female resembles it in plumage, but is only 41 inches, including the tail. The male is furnished with the gular pouch.

Colonel Sykes found an egg in a hole in the earth on the open plain, and that considerably advanced in the process of incubation. In shape it was a perfect oval; and in colour a brown olive, with obscure blotches of darker brown olive.

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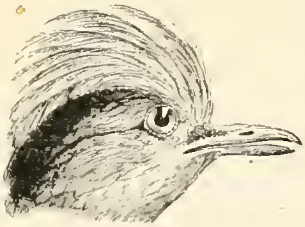
* Otis Nigriceps.

AFRICAN BUSTARDS.

Le Vaillant discovered one species* inhabiting the Caffre country and some parts of the colony of the Cape of Good Hope.

Another species,† met with by Major Denham, near the larger towns, did not occur in any great abundance. It frequented moist places, where the herbage was pure and fresh, and where it was taken in snares by the natives for food. It was almost invariably seen singly, Major Denham only once having observed a pair together. It was always found in company with gazelles. That gentleman praises its large and brilliant eyes. The Arabs are accustomed to compare the eyes of their most beautiful women to those of the *Oubara*, which seems to be a general name for the bustards of Africa.

A third species was discovered by Mr. Burchell, in South Africa,‡ which stood upwards of five feet in height, and may be regarded as the most gigantic development of the four hitherto observed. "We shot," Mr. Burchell says, "a large bird of the bustard kind, which was called *Wilde Paauw* (wild peacock). This name is here very wrongly applied, as the bird to which it properly belongs differs from this in every respect. There are, indeed, three, or perhaps four, birds to which, in different districts, this appellation is given. The present species, which is called Kori in the Sichuana language, measured, in extent of wing, not less than seven feet, and in bulk and weight was almost greater than some of the people could manage. The under part of the body was white, but the upper part was covered with fine lines of black on a chestnut-coloured ground. The tail and quill-feathers partook of the general colouring of the back; the shoulders were marked with large blotches of black and white, and the top of the head was black; the feathers of the occiput were elongated into a crest; those of the neck were also elongated, loose, narrow, and pointed, and were of a whitish colour, marked with numerous transverse lines of black."



HEAD OF OTIS HOUBARA.—GMEL.

The *Otis Houbara* inhabits the north of Africa, and appears occasionally in Europe. It is remarkable for its crest.

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* Otis Cærulescens. † Otis Denhami. ‡ Otis Kori.

THE STONE CURLEW.*

This bird is nearly allied to the Bustards. The upper parts are of a reddish ashy-brown, with a longitudinal dash on the middle of each feather; the space between the eye and the bill, throat, belly, and thighs, pure white; the neck and breast are slightly coloured with reddish, and speckled with longitudinal brown streaks; there is a longitudinal white band on the wing; towards the middle of the first quill there is a great white dash, and a very small one on the inner barb of the second; the lower tail-coverts are ruddy; and the quill-feathers, except those of the middle, are terminated with black. The base of the bill is bright yellowish, the rest black; the naked skin round the eyes, iris, and feet, is a pure yellow. The length of the bird from the bill to the feet is sixteen inches two lines.

Such are the adult birds, according to Temminck's description; but the plumage varies in some individuals. Thus in a specimen figured by Mr. Gould, there is, he says, an obscure bar of white above and below the eye, and the ground colour of the flanks and under surface is yellowish-white, whilst the yellow toes and feet are described as having a tinge of green.

This species is rapid on foot and powerful in flight, which it executes in wide circles, and haunting downs and open places, is generally approached with difficulty by the sportsman, though it will often squat in places favourable to its colour, till the bird is almost trod upon. The shrill evening cry of these birds may be heard nearly a mile on a still night. Slugs, worms, and reptiles are their favourite food.

White says, in a letter to Pennant: "I wonder that the stone-curlew should be mentioned by writers as a rare kind; it abounds in all the champaign parts of Hampshire and Sussex, and breeds, I think, all the summer, having young ones, I know, very late in the autumn." The same charming writer states, that these birds haunt only the most dry, open, upland fields, and sheep-walks far removed from water. The stone-curlew "lays," he says, "its eggs, usually two, never more than three, on the bare ground, without any nest, in the field; so that the countryman, in stirring his fallows, often destroys them. The young run immediately from the egg, like the partridges, &c., and are withdrawn to some flinty field by the dam, where they sculk among the stones which are their best security; for their feathers are so exactly of the colour of our gray-spotted flints, that the most exact observer, unless he catches the eye of the young bird, may be eluded . . . . *Œdicnemus* is a most apt and expressive name for them, since their legs seems swollen like those of a gouty man. After harvest, I have shot them before the pointers in turnip-fields." In his MS. the same author remarks, that they seem to descend in the night to streams and meadows, perhaps for water, which their upland haunts do not afford them.

This bird is distributed in Europe generally, where it seems to be migratory in many parts, in Britain and Germany for instance. Temminck notes it as abundant in the south of France (in which country, Below found young ones that could not fly at the end of October), Italy, Sardinia, the Greek Archipelago, and Turkey. It is also found in Asia and Africa. It occurred among the Trebizond collection of birds presented to the Zoological Society of London, by Mr. Keith Abbot; and the localities attributed to it by Mr. Gould are Europe and Africa, but not India. Colonel Sykes, however, had previously recorded it among the birds of the Deccan: at least, he says, "there is no visible difference between the Dukhun and British species." If it be the Charadrius Kervari of Hasselquist, which Linnæus and most authors suppose it to be, that traveller describes it as inhabiting Lower Egypt, near the sepulchres, and in the deserts. In

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* Œdicnemus crepitans.—Temm.

Britain it arrives early in the spring. The following is the earliest period recorded by White:—"On the 27th of February, 1788, stone-curlews were heard to pipe; and on March 1st, after it was dark, some were passing over the village, as might be perceived by their quick, short note, which they use in their nocturnal excursions by way of watch-word, that they may not stray and lose their companions. Thus we see that, retire whithersoever they may in the winter, they return again early in the spring, and are, as it now appears, the first summer birds that come back. Perhaps the mildness of the season may have quickened the emigration of the curlews this year." They are seldom seen after the beginning of October; but Markwick states, that he received, on the 31st January, 1792, a bird of this species, which had been recently killed by a neighbouring farmer, who said that he had frequently seen it in his fields (Sussex) during the former part of the winter. This, perhaps, adds Markwick, was an occasional straggler, which, by some accident, was prevented from accompanying its companions in their migration. As the autumn advances, these birds collect into flocks, soon after which they leave this country. Norfolk, Suffolk, Kent, and Hampshire seem to be the favourite counties of the stone-curlew; but it occurs, though rarely, in the Yorkshire Wolds, higher than which it does not seem to go in these islands. Mr. Selby says, that he never met with it, or heard of it in the more northern English counties, nor in Scotland. It does not occur in Mr. Thompson's Irish list in the "Zoological Proceedings." In the hands of a good cook, this species is a delicate bird for the table.

THE WHITE STORK.*

The White Stork generally stands from three feet and a-half to four feet in height, including its neck. The legs are exceedingly long, and do not appear sufficiently thick for the bulk they sustain; the feet are webbed. The beak is straight, long, pointed, and compressed. The stork walks slowly, and with measured steps; but its flight is powerful and long-continued, and it is accustomed to traverse the higher regions of the air,

> "Where the Rhine loses its majestic force
> In Belgian plains—won from the raging deep
> By diligence amazing, and the strong
> Unconquering hand of Liberty,—
> The stork-assembly meets; for many a day
> Consulting deep and various, ere they take
> Their arduous voyage through the liquid sky.
> And now their route designed, their leaders chose,
> Their tribes adjusted, clean'd their vigorous wings,
> And many a circle, many a short essay,
> Wheel'd round and round, in congregation full
> The figur'd flight ascends, and, rising high
> The aerial billows, mixes with the clouds."†

Storks are thus birds of passage. They spend the winter in the deserts of Africa and Arabia, and in summer return to towns and villages in colder latitudes, where they build their nests on the summits of old towers and belfries, on the chimneys of the highest houses, and sometimes in dead trees. In marshy districts, where the services of the bird in destroying reptiles are of great value, the people fix an old cart-wheel, by the nave, in an horizontal position, to the extremity of a long perpendicular pole;—an accommodation which seems so very eligible to the birds, that they rarely fail to construct their capacious habitation on such platforms.

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* Ciconia alba.

† Thomson.

The nest is a large cylindrical structure, built very strongly and durably with sticks, twigs, and strong reeds, and lined on the inside with fine dry herbs, mosses, and down gathered from the bushes. These fabrics last many years, and to them the faithful pairs annually direct their unerring course from far distant regions, to deposit their eggs, and to rear their young.

There are several references in the Scriptures to the bird now under consideration. Thus one of the inspired writers says, "As for the stork, the fir-tree is her house;" and it is stated by Doubdan, that the fields between Cana and Nazareth are covered by numerous flocks of them, each flock containing, according to his computation, more than a thousand. In some parts the ground is entirely whitened by them; and, on the wing, they darken the air like a congeries of clouds. At the approach of evening they retire to roost in the trees.

Jeremiah, the prophet, alludes to the annual migration of the stork. He speaks of it as "in the heaven," expressing in this way the astonishing flight of this bird when she starts for distant regions, and the amazing height to which she soars. He says also, that the stork "knoweth her appointed time." To this fact Shaw alludes, and states that for about the space of a fortnight before these birds pass from one country to another, they "constantly resort together from all the circumjacent parts in a certain plain; and there forming themselves, once every day, into a *douwanne*, or council, according to the phrase of eastern nations, are said to determine the exact time of their departure, and the place of their future abode."

In Bagdad, and some other of the remote cities of Asiatic Turkey, the nests of storks present a very remarkable appearance. The towers of the mosques at Constantinople, and most other parts of Turkey, are tall round pillars, surmounted by a very pointed cone; but at Bagdad the absence of this cone enables these birds to build their nests upon the summit; and as the diameter of the nest generally corresponds with that of the tower, it appears as a part of it, and a regular termination to it. The curious effect is not a little increased by the appearance of the bird itself in the nest, which thus, as part of the body and its long neck are seen above the edge, appears the crowning object of the pillar.

The Turks hold the bird in high esteem; and the stork, in cities of mixed population, rarely or never builds its nest on any other than a Turkish house. Thus, the Rev. J. Hartley remarks:—"The Greeks have carried their antipathy to the Turks to such a pitch, that they have destroyed all the storks in the country. On inquiring the reason, I was informed, 'The stork is a Turkish bird; it never used to build its nest on the house of a Greek, but always on that of a Turk.' The tenderness which the Turks display towards the feathered tribes is indeed a pleasing trait in their character."

In all countries where it breeds, as in Holland and Germany, it is protected, boxes being provided for these birds on the tops of the houses; and in many continental cities it is deemed a favourable omen for a man when a stork selects his roof as its periodical resting-place. Here it will remain for many successive years, the sagacious tenants of the nest returning, from time to time, with unfailing precision.

The eggs vary, being not less than two, and rarely exceeding four. The female covers them with the most tender solicitude, and will rather die than resign her charge. In the battle of Friedland, a farm near the city was set on fire by the falling of a bomb, and the conflagration extended to an old dry tree, on which a pair of storks had built their nest. It was then the season of incubation, and the mother would not quit the nest until it was completely enveloped in flames. She then flew up perpendicularly, and when she had attained to a great height, dashed down into the midst of the fire, as if endeavouring to rescue her beloved progeny from destruction. In one of these descents, enveloped in fire and smoke, she fell into the midst of the burning embers and perished.

The most assiduous care in the rearing of the young succeeds to that of incubation. The parents never lose sight of their brood. One remains in charge of the nest, while the other is abroad searching for serpents, lizards, frogs, or snails. Their teaching the young in their first career through the air is said to present an interesting spectacle.

A variety of passages may be gathered from the writings of the ancients, which show that they regarded the stork as eminent for requiting its parents. Its name in the Hebrew language signifies mercy or piety; and its English name is taken, if not directly, yet secondarily through the Saxon, from the Greek word *storgé*, which is often used in our language for natural affection.

> "The Stork's an emblem of true piety;
> Because, when age has seized and made his dam
> Unfit for flight, the grateful young one takes
> His mother on his back, provides her food,
> Repaying thus her tender care of him.
> Ere he was fit to fly."*

Burcherrode, a Dane, relates what he has seen, and that, it has been remarked, "without the ornaments or the exaggeration of poetry and fable." "Storks build," he says, "in the prefecture of Eyderstede, in the southern part of Jutland: and men may be taught by looking upon them. In a retired part of Eyderstede, some leagues from Toningen, towards the German Sea, there are clusters of trees. Among these they build; and if any creature comes near them in the nesting season, which lasts near three months, they go out in a body to attack it. The peasants never hurt them, and they are in no fear of them.

"The two parents guard and feed each brood, one always remaining on it, while the other goes for food. They keep the young ones much longer in the nest than any other bird, and after they have led them out of it by day, they bring them back at night; preserving it as their natural and proper home.

"When they first take out the young, they practise them to fly; and they lead them to the marshes, and to the hedge-sides, pointing them out the frogs, and serpents, and lizards, which are their proper food; and they seek out toads, which they never eat, and take great pains to make the young distinguish them. In the end of autumn, not being able to bear the winter of Denmark, they gather in a great body about the sea-coasts, as we see swallows do, and go off together: the old ones leading the young ones in the centre, and a second body of the old behind. They return in spring, and betake themselves in families to their several nests. The people of Toningen and the neighbouring coasts gather together to see them come; for they are superstitious, and form certain presages from the manner of their flight. At this time it is not uncommon to see several of the old birds, who are tired and feeble with the long flight, supported at times on the backs of the young; and the peasants speak of it as a certainty, that many of these are, when they return to their home, carefully laid in their old nests, and cherished by the young ones which they reared with so much care the spring before."

The stork is easily tamed, and may be trained to reside in gardens, which it will clear of reptiles and insects. Though grave in its air, it may be roused by example into a certain degree of gaiety. Hermann relates that he saw some children in a garden, playing at hide and seek: a tame stork joined the party, ran its turn when touched, and distinguished the child whose turn it was to pursue the rest so well, as, along with the others, to be on its guard.

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* Beaumont.

Another instance of sagacity has been recorded. A farmer, in the neighbourhood of Hamburg, brought into his poultry-yard a wild stork, to be the companion of a tame one which he had long kept there, but the latter, disliking a rival, beat the wild one so cruelly that he was compelled to take wing, and with some difficulty escaped. A few months afterwards, however, he returned to the poultry-yard, attended by three other storks, when they all fell on the tame stork and killed him.

This stately bird, though a visitor of the continent of Europe, from the north of Spain to Prussia, and particularly common in Holland, is rarely seen in England except in zoological collections. It was once, however, common; and one of the many evidences of the changes produced by the operations of man is afforded in the extinction of the stork. One or two solitary storks have been shot in England during the present century.

THE MARABOU STORK.*

The Marabou Stork appears to inhabit nearly the whole of tropical Africa. The plumes imported into Europe are chiefly brought from Senegal. It greatly resembles the white stork in its habits, but becomes still more familiar; and in consequence of its larger size, it renders far more essential service in removing carrion, offal, and other nuisances.

Smeatham gives an amusing description of a young marabou, which had been domesticated in that part of Africa where he resided. This bird always took its place at dinner-time in the great hall, behind its master's chair, where it remained in expectation of, as usual, sharing the meal. Though the servants carried switches to protect the dishes from its attacks previously to the arrival of the guests, yet, watching its opportunity, it would frequently snatch some favourite morsel before they were aware of it. It has been known in this way to make a single mouthful of an entire boiled fowl. Permitted to fly at large about the island, it roosted very high among the silk-cotton trees, from the tops of which, even at the distance of two or three miles, it would espy the servants carrying the dishes across the yard, and dash down among them as they entered the hall.

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* Ciconia Marabou.—Vig.

When sitting, it was observed always to rest itself on the whole length of the hind part of the leg. It sometimes stood in the room for half an hour after dinner, turning its head alternately, as if listening to the conversation.

It preyed on small quadrupeds, birds, and reptiles, and though it would destroy poultry, it never dared openly to attack a hen with her young ones. It had been known to swallow a cat whole; and a bone of a shin of beef being broken served it for only two morsels.

Its courage was not equal to its voracity, for a child of eight or ten years old was able to put it to flight; though it would seem at first to stand on the defensive, by threatening with its enormous bill widely extended, and crying out with a loud hoarse voice.

There are two other species of gigantic stork or crane: the Adjutant or Argala, of Bengal,* and a Javanese species described by Dr. Horsfield.† They strongly resemble the white stork of Europe, but become more familiar, and in consequence of their large size, render more essential service in the removal of carrion, offal, and other nuisances.

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* Ciconia Argala.

† Ciconia Javanica.

THE CARIAMA.*

The great solitary mountain-plains, surrounded by the forests which extend over so large a proportion of Brazil, yield a dwelling-place to this bird. It is also found, but more rarely, in Paraguay.

The neck of the Cariama is covered with long, loose, barbed feathers, which it can raise when excited or frightened. A light crest, consisting of a few disunited feathers, forms an ornamental tuft on the front, and advances on the base of the bill, which it overshadows. The space round the eyes is naked, the nakedness, which is bluish, reaching to the bill. The upper eye-lid is fringed with long dark lashes. The feet are long and slender, and the toes very short. The tail is rounded and of moderate length. The general colour of the bird is an earthy brown on the upper parts, while the lower parts are whitish. The length of the specimens described varies from thirty to thirty-two inches.

HEAD OF PALAMEDEA CRISTATA. GMEL.

FOOT OF PALAMEDEA CRISTATA.—GMEL.

The cariama is an extremely shy bird. A tenant of vast solitudes, the silence of which is broken by its sonorous voice, it is almost always on the watch, and very difficult of approach. Stalking slowly on the plain, it descries some intruder at a distance, and in a moment decides that it will remain or fly. As soon as it perceives that it is pursued, it sets off with great rapidity; the hunter follows on horseback, but it is not till after a sharp and tedious course, with many turns and windings, that the cariama, wearied out, either crouches on the ground, or alights on some bush or tree. In vain, till then, does the hunter try to throw his lasso or pull his trigger.

Still these birds are easily domesticated, and will live in peace with other occupants of the poultry-yard. They will even walk about the village or hamlet where they have been brought up, and return, like the poultry, after taking short trips in the fields. Their flesh is said to be very good.

THE SPOONBILLS.†

The bills of the birds thus denominated are very long and strong, very much flattened, and having the point very much dilated, and rounded into the form of a spoon or spatula; the upper mandible is channelled and transversely furrowed at its base. Their feet are long and strong: three toes are anteriorly united up to the second joint by membranes or webs; the posterior toe touches the ground. The wings are moderate and ample; the first quill is nearly as long as the second, which is the longest.

These birds live in society in wooded marshes, generally not far from the mouths of rivers, and are rarely seen on the sea-shore. Their food consists of small fishes, spawn, and small fluviatile testaceous mollusks, as well as small reptiles and aquatic insects.

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* Palamedea Cristata. Gmel.

† Platea.

According to circumstances, they build their nests either in high trees, in bushes, or among rushes. Their moult is simple and ordinary; but the young bird does not assume the confirmed livery of the adult till the third year.

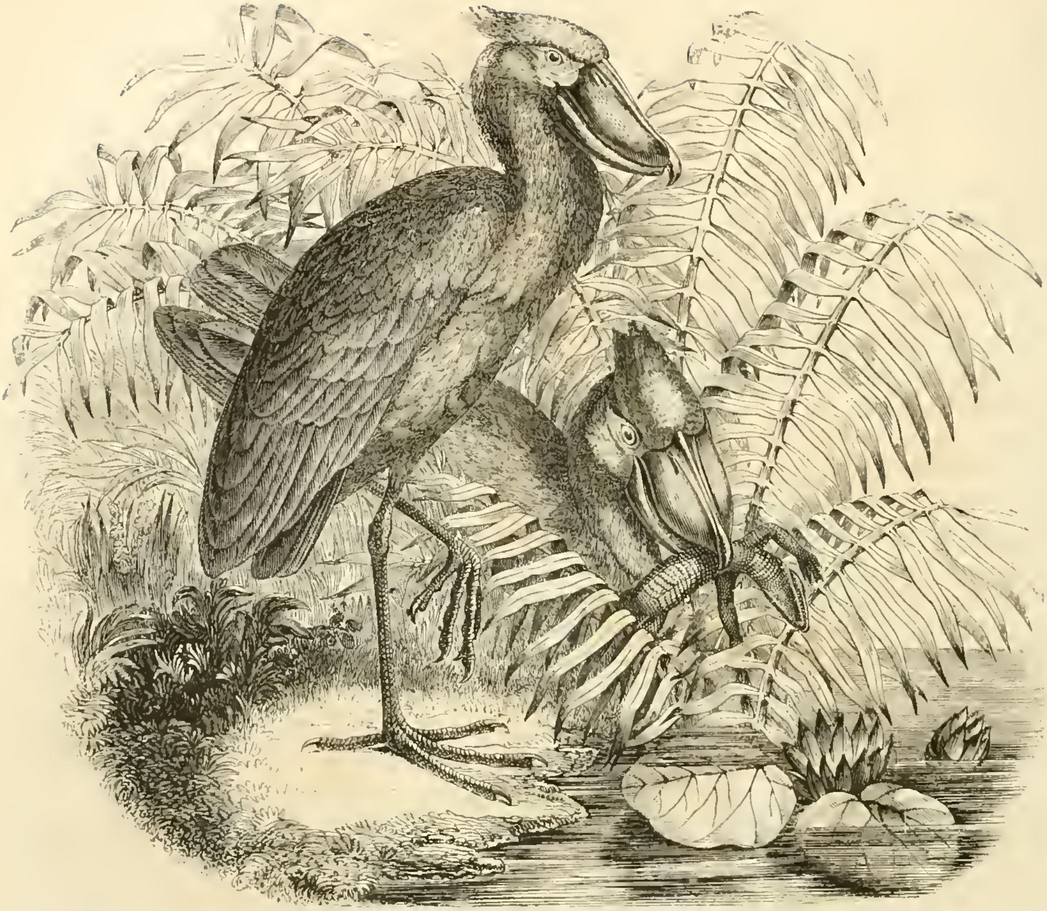
The bill is gradually developed, and appears covered with a membrane. The crest makes its appearance at the end of the second year. The differences between the sexes are only slightly marked.

These birds are distributed through Europe generally. Holland appears to be a principal place for their summer meetings. Temminck states, that the spoonbill has two periods of passage along the maritime coasts, and that it journeys with the storks. As winter approaches, it migrates to more southern regions till the milder weather recalls it.

Mr. Bennett tells us that in winter it takes up its quarters in various parts of Africa, extending southwards even to the Cape of Good Hope. It is rarely met with in inland countries, except on the banks of the larger rivers; but it is by no means uncommon, during the season, on the coasts of the great extent of country which it embraces in its visits.

In England it only appears occasionally. Pennant mentions a large flight which arrived in the marshes near Yarmouth in April, 1774. Colonel Montagu describes it as sometimes seen during the winter on the coast of South Devon, and mentions his receiving two specimens from that part of the country, one in November, 1804, and the other in 1807. Mr. Yarrell records two specimens which were shot in Lincolnshire in 1826.

The flesh of the spoonbill, when well fed and fat, is said to resemble in flavour that of a goose.



AFRICAN WATER-FOWL.*

The appearance of this bird is very remarkable. Our knowledge of it is due to the indefatigable exertions of Mr. Gould. With its manners we have yet to make an acquaintance. In some respects it will remind the ornithologist of the singular-looking bird called the Boatbill.

The end of the beak and the form of the feet resemble those of the Dodo. The beak of the *Balæniceps Rex* is formed like a spoon, and is very large; it is yellow in the male, and red-brown in the female. The crest is convex, and terminates in a hook at the extremity; it is of a light brown colour, which gradually changes to yellow as it approaches the bill. The nostrils are long. The middle of the lower jaw is membraneous. The skin surrounding the eyes is of a yellow colour, and quite free from hair. The eyes are of a clear grayish brown. The feet are very long, and covered with fine scales, which distinguish this bird from other water-fowl, whose feet are generally covered with large and coarse scales. The general colour of the bird is gray, lighter upon the back and feet than at other parts of the body. The feathers at the back of the head are long and of a peculiar form. The tail of the bird resembles that of the Jabiru of America. It inhabits the marshy districts of Africa, and subsists upon the fish and small reptiles which there abound.

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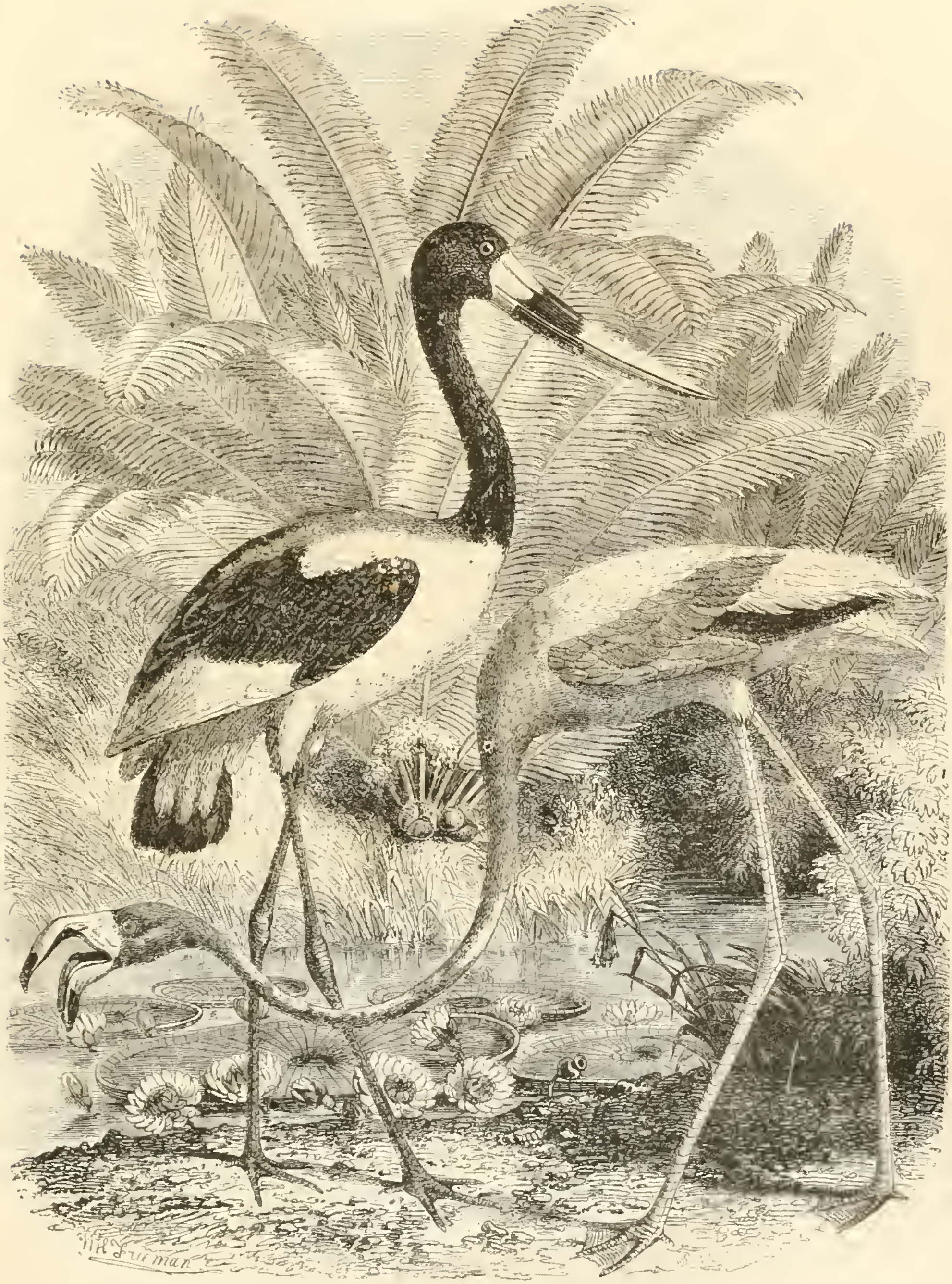
* Balæniceps Rex.



THE RED FLAMINGO AND THE JABIRU.*

The remarkable figure and proportions of the Flamingo at once indicate its position among the wading birds. The neck is slender and of great length, equalling commonly that of the feet, which are about two feet. With a body less than that of a common goose, slender and tapering, it is thus adapted to wade through shallows and morasses with great security. But as the flamingo frequents the sea-coast and the adjacent marshes, it has also the power of swimming, and its toes are partially webbed; and thus it may fearlessly venture even beyond its depth, nor apprehend being carried away by the retiring tide.

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* Phœnicopterus Ruber.—Linn.

Its food consists of small fish, shells, and water insects, for the capture of which its beak is most singularly constructed; in length it is nearly five inches; the upper mandible is bent downwards in the middle, at an acute angle, as if broken, the space from the angle to the point being a broad flat plate, of a somewhat oval figure; the lower mandible, which is the larger, is so adjusted as to fit the angle with its edges, its under surface being gently arched downwards. The edges of both mandibles are furnished with a row of serrations, or tooth-like eminences, those of the upper being the larger.

The use of the mandibles is, like a strainer, allowing the water to pass through, but retaining any small body, as an insect or a fish. In searching for food among the mud, at the bottom of waters, the upper and not the under mandible is applied to the ground; the flat portion of its surface being well adapted for pressing close down on the soft bed of the marsh or creek. Hence, in that situation, the inferior mandible is placed uppermost, and by its motion works the disturbed and turbid water through the two, as is seen in ducks and other aquatic birds. The tongue is large and fleshy, and the sense of taste is probably acute.

The height of the flamingo, in its natural attitude, is about four feet. The first year, its livery is of a grayish clouded white; the second, the white is purer, but the wings are tinted with a beautiful rose-colour; in the third year it attains its full plumage. Its colour is then extremely rich and brilliant, being of a fine deep scarlet on the back, and roseate on the wings, the quill-feathers of the wings being jet black. The hues of the bird become more intense during succeeding years. A flock of these tall and splendid birds, moving about on the sea-beach, with their plumage reflecting the glowing rays of a tropical sun, is a spectacle never to be forgotten.

The mode of incubation of this bird is exceedingly curious. Were its nest constructed like those of birds in general, its long limbs would be always in the way; besides, the flamingo never sits down, but rests standing on one leg. But the instinct implanted in the bird by the All-wise Creator obviates all these difficulties. The flamingo raises a nest, if nest it can be called, of mud in the form of a hillock, and slightly concave at the top. Here the female bird lays two large white eggs, and sits to hatch them, her legs hanging down on each side of this singular mound, and the toes just touching the earth at its base.

This bird, known in Europe, has been seen everywhere on the African coast, and the adjacent islands, quite to the Cape of Good Hope. Le Vaillant found thousands of them on the river Klein-Brak, where the water is brackish owing to the flowing of the tide. It has been occasionally observed on the coasts of Spain, of Italy, and on those of France, which lie on the Mediterranean Sea. It is rare and accidental in the neighbourhood of Rome; and it has been noticed in various parts of the East.

AMERICAN SPECIES OF FLAMINGO.[*]

This species, in its adult state, scarcely differs from the European flamingo; it is, perhaps, not so bright. Catesby says: "When they feed (which is always in shallow water, by bending their necks), they lay the upper part of the bill next the ground, their feet being in continual motion up and down in the mud, by which means they raise a small round sort of grain, resembling millet, which they receive into their bills; and as there is a necessity for receiving into their mouth some mud, Nature has provided the edges of their bills with a sieve, or teeth like a fine comb, with which they retain the food, and eject the mud which is taken in with it. This account I had from persons of credit; but I never saw them feeding myself, and, therefore, cannot absolutely refute the opinion of others who say they feed on fish, particularly eels, which seem to be the slippery prey Dr. Grew says that the teeth are contrived to hold."

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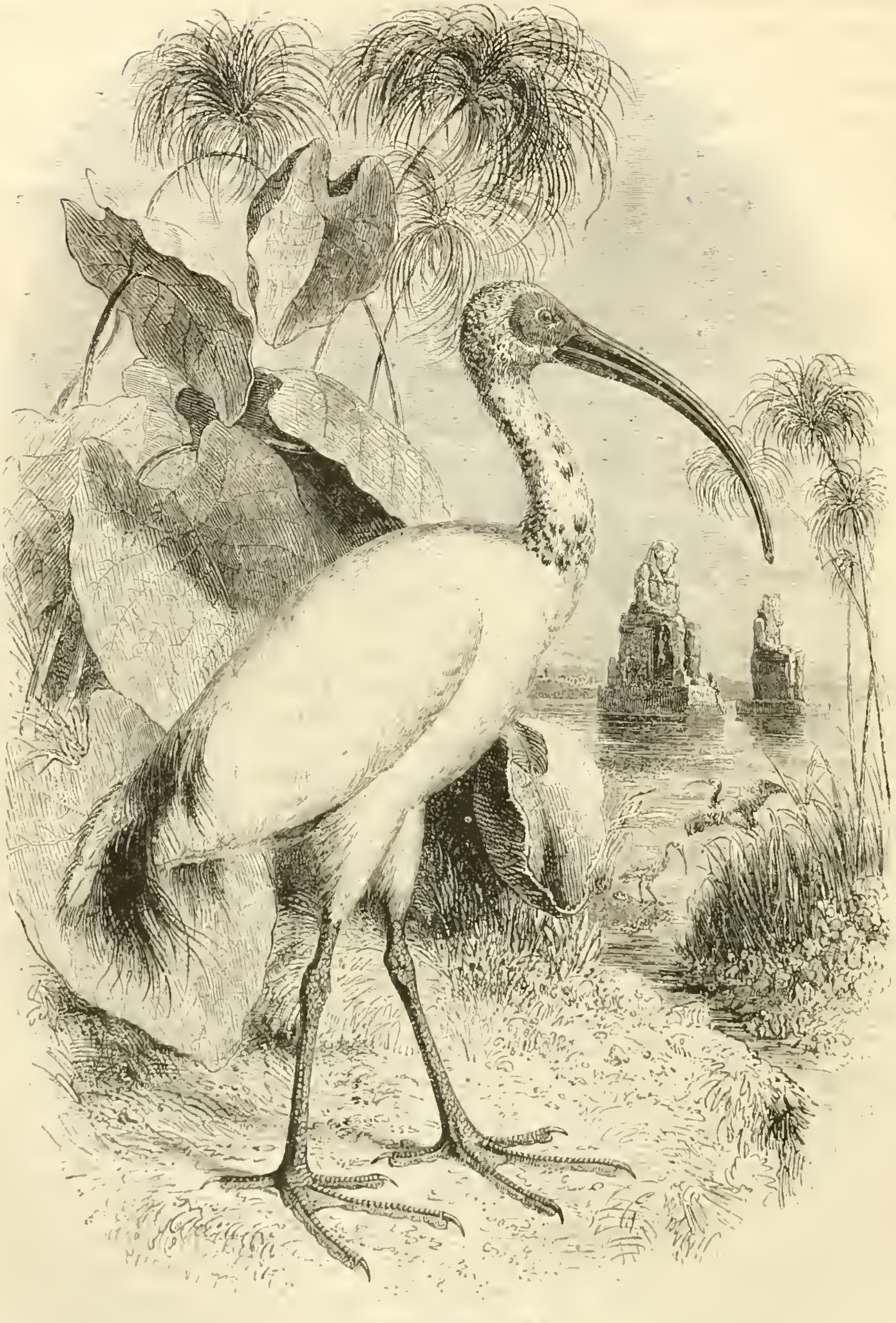
[*] Phœnicopterus Chilensis   Molina.

The bird represented in the engraving with the flamingo is one of a genus called *Jabiru*, and of a gigantic size. The bill is long, conical, smooth, robust, compressed, and pointed. The head and neck are more or less bare of feathers. The anterior toes are united at the base by a membrane.



THE SACRED IBIS.*

The earliest account of the Ibis that we have is from the pen of Herodotus, an eye-witness:—"The ibis is all over very black; it has the legs of a crane, and a beak considerably curved; its size is about that of a *crex*. Such is the appearance of the black ibis, which fights against the serpents. But the other ibis, which is more of a domestic bird (for there are two kinds), has the head and all the neck bare of feathers; it is of a white colour, except the head, neck, and extremities of the wings and tail, all which parts are very black. As to its legs and beak, it resembles the other kind of ibis." According to Herodotus, the black ibis devoured the winged serpents which yearly attempted to make their entry into Egypt from Arabia; but these, it is scarcely necessary to add, are merely fabulous reptiles.

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* Ibis religiosa.

Strabo, who was some time in Egypt, gives the following account:—"The ibis is the tamest bird of all: in form and size it is like the stork. But there are two varieties of colour, one of which is that of the stork, and the other is all black. Every street in Alexandria is filled with them, partly to the benefit of the citizens, and partly not. The bird is useful so far, as it devours all kinds of vermin, with the garbage of the shambles and the refuse of the eating-houses." Here Strabo does not distinguish between the two birds, except in colour, and he describes both species as living on garbage. It is most probable that he confounded two birds, the ibis and the stork.

Our engraving represents the Sacred Ibis. Although well-preserved mummies of this bird are to be met with in abundance, they appear, if not to have escaped the observation of naturalists, at all events to have been examined without much penetration; and even Blumenbach, the celebrated physiologist of Germany, who examined the bones of the true ibis in a mummy in London, considered them as belonging to the Tantalus ibis—a bird as large as a stork, and with a similar kind of beak—thus falling into the universal error. The individual to whom the merit of breaking through this popular error is due is the traveller Bruce, who used his own eyes, and exercised his own judgment. He at once recognised the true ibis as one which at the present day abounds on the banks of the Nile, and is known there by the name of Abou-Hannes, or Father John. This bird, he tells us, appeared to him the same "as that which the mummy-pitchers contained;" while the Tantalus ibis of Linnæus, or white ibis of Buffon, was there unknown, or extremely rare, so that he never even saw it. The various sculptured figures of the sacred ibis, which are still preserved upon the relics of antiquity, Egyptian, Greek, and Roman, are sufficient to confirm his opinion, independent of the actual relics of the bird in question.

At a subsequent period, the illustrious Cuvier, suspecting the accuracy of the prevailing theories entertained by the scientific, instituted a series of investigations which led to a similar conclusion. Speaking of two ibis mummies taken from the pits of Saccara, he says: "On carefully exposing them, we perceived that the bones of the embalmed bird were much smaller than those of the Tantalus ibis of naturalists; that they did not much exceed those of the curlew in size; that its beak resembled that of the latter, being only a little shorter in proportion to its thickness, and not at all that of the Tantalus; and lastly, that its plumage was white, with the quills marked with black, as the ancients have described it." . . . . "We found, after some inquiries, that the mummies of the ibis which had been opened before by different naturalists were similar to ours."

Buffon, who examined several, and even noticed the character of the different parts, was blindly led away by the popular opinion. And yet the paintings of Egyptian ceremonies at Herculaneum, in which several of these birds are drawn walking in the courts of temples; the mosaic of Palestine, which presents the ibis perched upon buildings; various medals and bronze figures, all of which are accurate representations—were known; so that, as is too often the case in matters of the highest moment, as well as in those relating to science or art, the eyes and the understanding seem to have been wilfully blinded. One cause of this universal error, however, arose from the supposition that a bird, described as a destroyer of serpents, and which, according to the information received by Herodotus, once saved Egypt from the invasion of a host of "winged serpents," must be a bird of considerable size, and armed with a large and powerful beak, and which must, therefore, be sought for among such as possessed these characters; for how could a bird with a weak bill, like a curlew, devour these dangerous reptiles? That the ibis religiosa ate nothing but serpents, is not pretended; but that it did eat them, is also proved; and it is well observed by Cuvier, "that positive proofs, such as descriptions, figures, and mummies, ought to preponderate always over accounts of habits too often imagined without any other motive than to justify the different worships rendered to animals. It might," says he, "be added, that the serpents from which the ibis delivered Egypt are represented to us as very venomous, but not as very large. I have even obtained direct proof that the birds preserved as mummies, and which have had a beak precisely similar to that of our bird, were true serpent-eaters; for I found in one of their mummies the still undigested remains of the skin and scales of serpents, which I deposited in our anatomical galleries."

Cuvier thus describes this bird: "It is as large as a hen, with white plumage, except the end of the wing-feathers, which is black; the last coverts have their barbs elongated, loose, black, with violet reflexions, and thus covering the wings and tail. The bill and the feet are black, as well as all the naked part of the head and neck; this part is covered in youth, at least on its upper surface, with small blackish feathers. The species is found throughout the extent of Africa."

Mr. Swainson states, that the ibises are large and very singular birds, living almost entirely on the swampy banks of rivers and fresh waters, rarely, if ever, frequenting open shores, like the more typical waders. He observes, that their structure and habits seem compounded of those belonging to the herons on one side, and to the rails on the other; their flight and size, he says, remind us of the former, while their long toes and insectivorous nature are more in accordance with the latter.

THE SCARLET IBIS.*

America, as well as Africa, has ibises; and the one just mentioned we now proceed to describe. It is twenty-three inches in length, and thirty-seven in alar extent. The bill is five inches long, thick, and of a somewhat square form at the base, gradually bent downwards, and sharply ridged; black except near the base, where it inclines to red. The iris is dark hazel. The face is naked, slightly wrinkled, and pale red. The chin is bare and wrinkled also. The plumage is rich, glowing scarlet, except about three inches of the extremities of the four outer quill-feathers, which are deep steel-blue. The legs are pale-red. The three anterior toes are united by a membrane as far as the first joint.

According to Nuttall, this brilliant and exclusively American species inhabits chiefly within the tropics, abounding in the West India and Bahama islands, and south of the equator, at least as far as Brazil. They migrate about July and August into Florida, Alabama, Georgia, and South Carolina; but retire into Mexico or the Caribbean islands at the approach of cool weather.

They generally assemble in numbers, frequenting the borders of the sea, and the banks and estuaries of neighbouring rivers, feeding on small fry, shell-fish, crustacea, worms, and insects, which they collect at the ebbing of the tide. They are said to be in the habit of perching on trees in companies; but they lay their eggs, which are greenish, on the ground, amidst the tall grass of the marshes, on a slight nest of leaves.

The young, when just hatched, are black, soon changing to gray, but they are nearly white before they are able to fly; by degrees they attain their red plumage, which is not complete until the third year. The young and old associate in distinct bands. In the countries where they abound they are sometimes domesticated, and accompany the poultry. The ibis is generally esteemed as good food; and its rich and gaudy plumage is used by the Brazilians for various ornaments.

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* Ibis rubra.—Vieill.

THE GLOSSY IBIS.*

"There is good reason to believe," says Mr. Yarrell, "that the Green, the Glossy, and the Bay Ibis of authors, with the various systematic names in use among ornithologists, refer only to various states of the same breed, depending on age or season, the difference in appearance inducing the names.

"The appearance of the Glossy Ibis in this country, though not uncommon, is still accidental; the course of its migration for the summer towards the north of Europe being considerably to the eastward in a line from Egypt to Turkey, Hungary, and Poland, to the southern parts of Russia. It is also occasionally seen, on its passage from northern Africa, in the Grecian Archipelago, in Sicily, Sardinia, and at Genoa."

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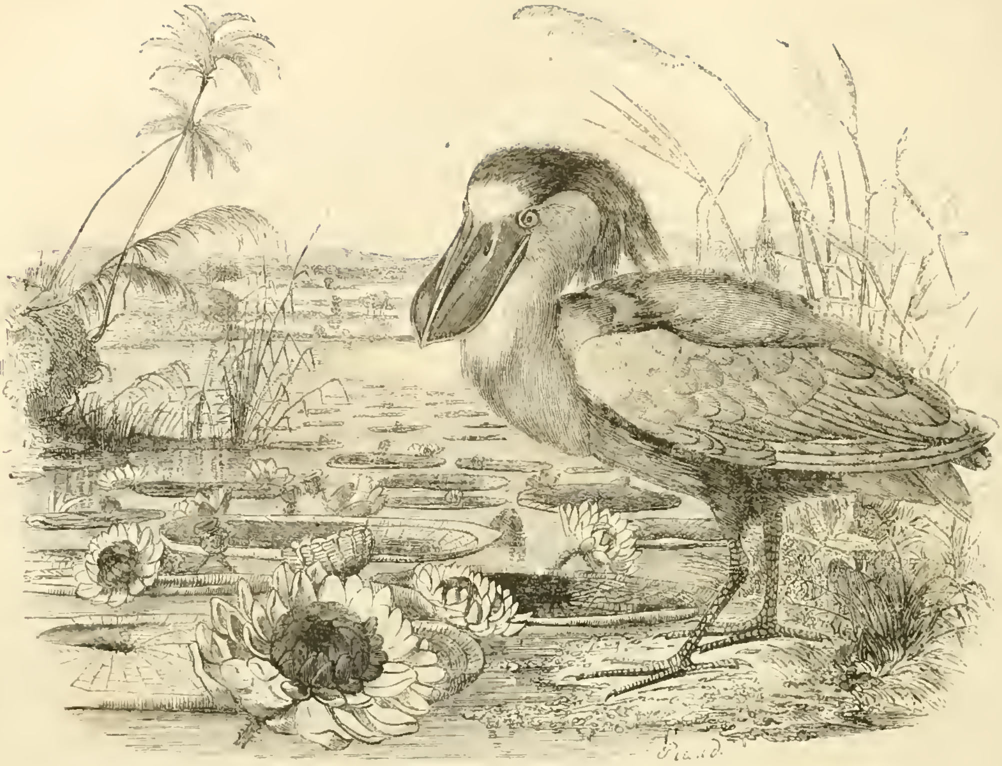
* Tantalus Falcinellus.—Penn.



THE BOAT-BILL.*

The Boat-bill is about the size of a domestic hen. Its beak resembles a boat reversed, having a strong ridge or keel down the middle of the upper mandible, and the sides spread out and bowed.

In the male, the upper part of the neck and breast are dirty white; the back and lower part of the belly rusty-reddish. The legs and feet are brown. From the head depends a long crest of feathers, falling backwards.

The female has the top of the head black, without the elongated crest; the back and the belly rusty-reddish; the wings gray; the forehead and rest of the plumage white; the bill, legs, and feet, brown.

Latham says: "This species inhabits Cayenne, Guiana, and Brazil, and chiefly frequents such parts as are near the water. In such places it perches on the trees which hang over the streams, and, like the kingfisher, drops down on the fish that swim beneath."

The food and general habits of this bird place it among the herons, an extensive family, containing many groups, at which we must now glance. They vary from each other in certain details, but all agree in general characteristics. They are strictly carnivorous, living on fish, reptiles, and even the smaller mammalia which frequent the borders of lakes or marshes.

Night is the season of their activity. Their sight is acute, and their stroke surprisingly rapid. Their body is light, their wings ample, and their flight lofty.

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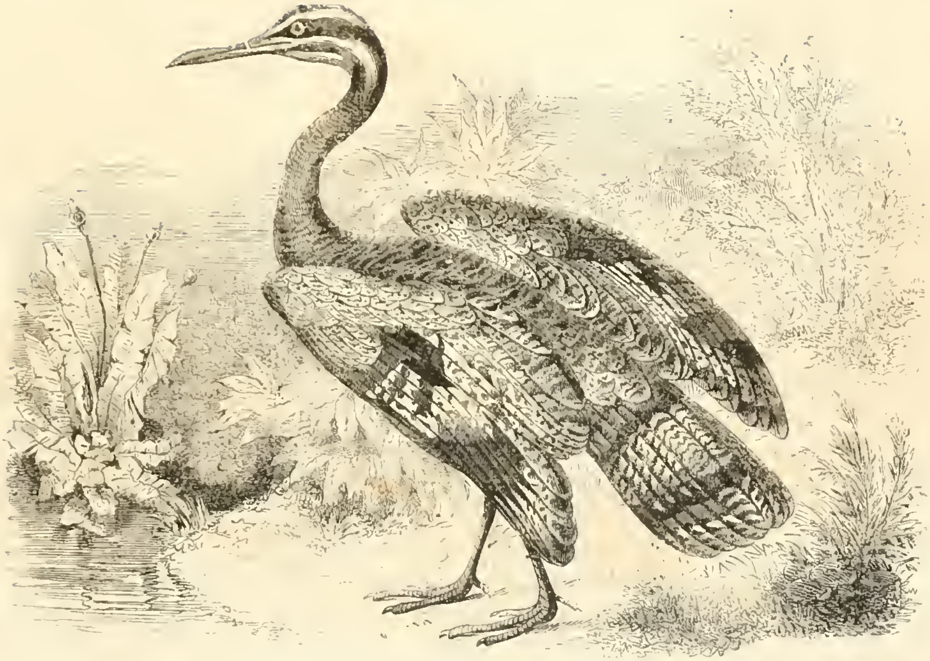
* Cancroma cancrophaga.—Linn.

THE HERONS.*



THE SCOPOLACEOUS HERON.†

The herons are to be found in all quarters of the globe, but they seldom occur in very cold regions. The bill of these birds is much longer than the head, as large as it is high or larger at the base; the upper mandible is nearly straight. A great portion of the tibia is naked.

HEAD OF ARDEA NYCTORAX.—LINN.

FOOT OF ARDEA NYCTORAX.

The Common Heron, whether male or female, after the third year, has long loose black feathers on the back of the head; similar plumes of a lustrous white depend from the lower part of the neck; the equally elongated and subulate scapulars are of a silvery ash. The forehead, neck, middle of the belly, and border of the wings and thighs, are of a pure white: the occiput sides of the breast and flanks are deep black. On the front of the neck are large longitudinal black and ash spots. The back and wings are very pure bluish ash; the bill is a deep yellow; the iris yellow; the naked skin of the eye bluish purple; the feet are brown, but of a lively red towards the feathered part. The length is three feet and upwards.

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* Ardea.

† Ardea Helias.—Linn.

Deadly feuds sometimes take place between the herons and the rooks, arising in a dispute for the possession of the nest-trees. One of them occurred at Dallam Tower in Westmoreland, originating in the felling of the fine old oaks occupied by the herons, and their consequent attempt upon the grove in the tenure of the rooks. The herons had the best of the fray for two successive seasons, and at length a sort of peace was made between the two combatants; the herons and the rooks severally setting up their nest on a particular part of the now only remaining grove, and leaving the other moiety to their former antagonists.

Some singular facts are related by P. Neill, Esq., of Canonmills, near Edinburgh, relating to these birds in a state of partial domestication. That gentleman says:—"The common heron, a male, which was winged on Coldingham Muir in autumn, 1821, when a young bird, and given to me in 1822, by Mr. John Wilson, of the College, has since resided in my garden at Canonmills, and is now so tame that he often follows me, expecting a piece of cheese, which he relishes. Four years ago, Mr. Allan, of Lauriston, sent me a young female, which had been taken during a severe storm. She soon associated with the elder bird. In summer, 1828, she laid three or four eggs on the top of the wall next to the millpond. She then laid one or two on the flower border below the wall, and close by the box-edging, where some eggs were broken by the birds suddenly starting off when alarmed by strangers walking in the garden. We supplied their place by some bantam eggs, but only one heron egg at last remained. Alas! the poor hen having strayed to the margin of the mill-pond, was shot by some thoughtless young man with a fowling-piece. The cock continued to sit for several days after the hen, but at last tired. He used to sit when she went off for food. During the whole time of pairing the cock was very bold, raising his feathers and snapping his bill whenever any one approached."

Another fact is thus stated on the same authority: "A large old willow-tree had fallen down into the pond, and at the extremity, which is partly sunk in the sludge, and continues to vegetate, water-hens breed. The old cock heron swims out to the nest, and takes the young if he can. He has to swim ten or twelve feet, where the water is between two and three feet deep. His motion through the water is slow, but his carriage is stately. I have seen him fell a rat by one blow on the back of the head, when the rat was munching at his dish of fish."

We give an illustration of the bird called the Scolopaceous Heron, from its resemblance, in certain respects, to a family hereafter to be noticed; and another of the head and foot of one genus, denominated *Nyctorax*. Six other species of this genus are known, occurring in Europe, Asia, Africa, and America; and they have been found in Manilla, New South Wales, and Terra del Fuego.

THE GREAT WHITE HERON.*

This tall and elegant bird principally inhabits the regions of the south, being found from Guiana, and probably beyond the line, to New York. It enters the territories of the United States late in February. The high inland parts it rarely or never visits; its favourite haunts being vast, inundated swamps, rice-fields, the low, marshy shores of rivers, and similar places; where, from its size and colour, it is very conspicuous, even at a great distance.

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* Ardea Egretta

The appearance of the Great White Heron, during the first season, when it is entirely destitute of the long flowing plumes of the back, is so different from that of the bird in its full plumage, which it obtains in the third year, that naturalists and others generally consider them as two species.

This bird breeds in several of the extensive cedar-swamps in the lower parts of New Jersey. Their nests are built in societies, on the trees. The eggs are usually four, of a pale-blue colour. In the months of July and August, the young make their first appearance in the meadows and marshes, in parties of twenty or thirty together. The large ditches, with which the extensive meadows below Philadelphia are intersected, are, about that season, regularly visited by flocks of these birds; these are frequently shot, but the old birds are too sagacious to be easily approached. Their food consists of frogs, lizards, small fish, insects, seeds of the splatterdock (a species of *nymphæ*), and small water-snakes.

The long plumes of these birds have, at various periods, been in great request in Europe, particularly in France and Italy, for the purpose of adorning head-dresses.

THE BITTERN.*

The provincial English names of this bird, such as "Mere-drum," and "Bull of the frog," as well as many of its foreign appellations, allude to the bellowing or drumming noise for which it is remarkable. This deep note of the "hollow-sounding bittern" is heard at the breeding season, about February or March.

As the day declines the bittern leaves his haunts, and rising spirally, soars to a great height in the twilight. Ordinarily it flies very heavily, like the heron, uttering from time to time a resounding cry.

"This, without doubt," says Willughby, "is that bird our common people call the night-raven, at whose 'deadly voice' the superstitious wayfarer of the night turned pale and trembled. The common people have a great dread of it, imagining its cry portends no less than their death, or the death of some of their near relations; for it flies in the night, answers their description of being like a flagging collar, and hath such a kind of hooping-cry as they talk of."

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* Botaurus Stellaris.

Mr. Maxwell, in his "Wild Sports of the West of Ireland," describing the sport enjoyed by a friend and himself, while shooting over a fen in Ireland, says, "Out of seventy head, we reckoned one woodcock, and a brace of old grouse that we found among the heathy banks bordering the fen. We shot six couple of teal; and, with one exception, the remainder of the count were snipes, of which at least a fourth were jacks. In the most impassible section of the morass, old York pointed with more than customary steadiness; and, it might be fancy, actually looked round with peculiar expression, as if he would insinuate that no common customer was before him. I got within twenty yards, and encouraged the old setter to go in; but he turned his grizzled and intelligent eyes to mine, and wagged his tail, as if he would have said, 'You don't know what I have here.' A tuft of earth flung by one of the aides-de-camp obliged the skulker to get up, and to our general surprise, a fine bittern rose. I knocked him over; but though he came down with a broken wing and wounded leg, he kept the old dog at bay until my companion floundered through the swamp and secured him. On this exploit I plumed myself, for bitterns are here extremely scarce, and in Ballycroy they are seldom heard or found."

THE CRESTED LAPWING, OR PEWIT.*

This is a beautiful bird, abounding in many parts of England, and also of the continent, especially Holland, where it assembles in large flocks. Multitudes of Lapwings are annually taken in autumn and winter for the table; its flesh being, in those seasons, of excellent flavour. Their eggs also are regarded as great delicacies.

Dr. Latham remarks: "I have seen this bird approach a worm-cast, turn it aside, and, after walking two or three times about it, by way of giving motion to the ground, the worm comes out, and the watchful bird, seizing hold of it, draws it forth. The habit of the pewit of flying and screaming over the head of any one who happens to go near their eggs or young, was productive, formerly, of two very opposite feelings towards them." The instinct of this bird in defence of its young and in solicitude for their safety, cannot be surpassed. Let only a man or a dog approach the nest, and the parents will sweep close around the intruder, flutter, as with broken pinions, along the ground before him; now take wing, keeping so near that it might seem easy to catch them; now wheeling round, now darting forwards, and uttering incessantly their plaintive cry of *peweet, peweet,* till, at length, having effected their purpose, the sagacious birds mount upwards, and the little ones are safe.

The lapwing may easily be distinguished, even on the wing, from the contrasted black and white of its plumage. The head is black, glossed with green, and from the occiput arises an elegant crest of long, slender black feathers, turned slightly upwards. The throat is black; the sides of the head and neck are white; the back and wing-coverts are greenish black, with purple and blue reflexions; the chest and under parts are white; the upper tail-coverts are pale chestnut; the tail is white at the base, and at the top, but black the rest of its length.

"Charles Anderson, Esq., of Lea, near Gainsborough, to whom I," says Mr. Yarrell, "am indebted form any notes on the birds of Lincolnshire, sends me word, that a very ancient Lincolnshire family, the Tyrwhitts, bear three pewits for their arms; and it is said, from a tradition, that it was in consequence of the founder of their family having fallen in a skirmish, wounded, and being saved by his followers, who were directed to the spot where he lay by the cries of these birds, and their hovering over him." The notice, however, so frequently given by these birds, was sometimes productive of very different consequences. Mr. Chatto, in his agreeable "Rambles in Northumberland and the Scottish Border," refers to "the persecution to which the Covenanters were exposed in the reign of Charles the Second and his bigoted successor;" and quoting Dr. Leyden, alludes to the tradition, that "they were frequently discovered to their pursuers by the flight and screaming of the lapwing; in consequence of which, the lapwing is still regarded as an unlucky bird in the south of Scotland."

Mr. Selby says: "The trade of collecting the eggs continues for about two months; and great expertness in the discovery of the nests is shown by those accustomed to it; generally judging of their situation by the conduct of the female birds, who invariably, upon being disturbed, run from the eggs, and then fly near to the ground for a short distance, without uttering any alarm cry. The males, on the contrary, are very clamorous, and fly round the intruder, endeavouring, by various instinctive arts, to divert his attention.

On this subject, also, Mr. Salmon observes, "So expert have some men become, that they will not only walk straight towards a nest, which may be at a considerable distance, but tell the probable number of eggs it may contain previous to inspection; generally judging of the situation and number of eggs by the conduct of the female bird, which, when disturbed, leaves its eggs, and flies off to a considerable distance without uttering any note of alarm."

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* Vanellus Crestatus.

THE GRAY LAPWING.*

This bird, which is not very common in Britain, holds a kind of intermediate place between the lapwing and the plovers. The crested lapwing is between thirteen and fourteen inches in length, measures fully two feet and a-half in the extent of its wings, and weighs eight ounces. The gray lapwing is about twelve inches long, two feet in the stretch of the wings, and seven ounces in weight. In England it appears only in winter, when the under part is nearly all white, and much of the upper part ash-gray.

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* Squatarola cinerea.

THE GOLDEN PLOVER.*

The young birds, when hatched, are covered with a beautiful parti-coloured down of bright king's yellow and brown. They quit the nest as soon as hatched, and follow their parents till able to fly and support themselves, which is in the course of a month or five weeks. The old birds display great anxiety in protecting their young brood, using various stratagems to divert the attention of an enemy; among others, that of tumbling over as if unable to fly, or feigning lameness, is the most frequent, and appears indeed to be the instinctive resort of those birds that construct their nests and rear their young on the ground. When aware of the approach of an intruder, the female invariably runs to some distance from her nest before she takes wing, a manœuvre tending to conceal its true situation; and the discovery of it is rendered still more difficult by the colour and markings of the eggs, assimilating so closely to that of the ground and surrounding herbage. The usual call of the plover is a plaintive monotonous whistle, by imitating which it may frequently be enticed within a very short distance. In the breeding season a more varied call is used, during which it flies at a great elevation, and continues soaring round for a considerable time. To the whistling of the plover our poet Thomson elegantly alludes in his opening lines on Spring, while yet "the trembling year is unconfirmed," so that "scarce the bittern knows his time" to shake the marsh,

"Or from the shore,
The plovers when to scatter o'er the heath,
And sing their wild notes to the listening waste."

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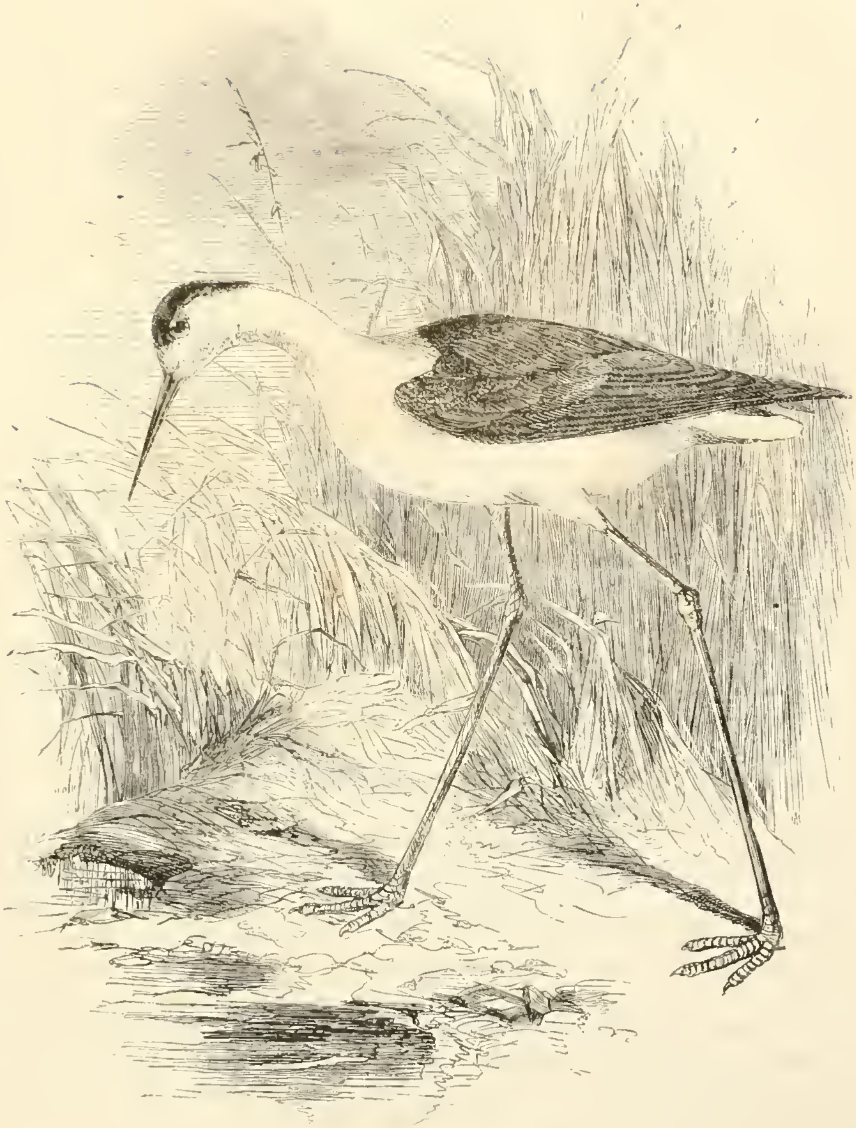
* Charadrius Pluvialis.—Penn.



THE STILT PLOVER.*

To adopt a part of the interesting description of Gilbert White: "It must be matter of great curiosity to see the Stilt Plover move; to see how it can wield such a length of lever with such feeble muscles as the thighs seem to be furnished with. At least, one should expect it to be but a bad walker; but what adds to the wonder is, that it has no back toe. Now without that steady prop to support its steps, it must be liable, in speculation, to perpetual vacillations, and seldom able to preserve the true centre of gravity. The old name of *Himantopus* is taken from Pliny, and, by an awkward metaphor, implies that the legs are as slender and pliant as if cut out of a thong of leather."

Mr. Gould states that this genus, although widely distributed, contains only two well-authenticated species, one of which has furnished our illustration, and the other is known in North America.

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* Charadrius Himantopus.—Penn.

A large and varied family of the Grallatores, is called *Scolopacidæ:* their general forms may be thus described: the bill long, straight, compressed, and soft, with the point enlarged; the two mandibles furrowed for half their length; the point of the upper mandible longer than the lower, the enlarged end forming a blunt hook. The nostrils are lateral, basal, slit longitudinally near the borders of the mandible, and covered by a membrane. The feet moderate, slender, the naked space above the knee very small; three toes before entirely divided, the external and middle toe united, and a hind toe. The wings moderate, the first quill rather shorter than, or of the same length as, the second, which is the longest.

"Most of this family," as Selby observes, "procure food by thrusting the bill into the soft earth, or the mud of shores, and thence extracting their prey; and to facilitate this, an extraordinary development of nerve is distributed over and to the extreme point of the bill, thus endowing them with an exquisite sense of feeling; and in many species this member is further provided with a peculiar muscle, which, by the closing of the upper part of the mandibles, operates so as to expand them at the point, and enables the bird, with the bill still buried in the ground, to seize its prey the moment it is aware of being in contact with it." This peculiar mode of searching for their prey, has obtained for many species at least (the snipe, woodcocks, &c.) the title of *Birds of Suction.*

Some of these birds voraciously devour fish, and hence the following remarks of Mudie are well entitled to consideration: "Were it not that the tribes of the living world restrain each other, the duration of the whole would be brief—far more so than those who have not reflected on the subject would readily imagine. It is in the mutual destructions (which are in truth *preservations*), that we can best see the wisdom and goodness of the Creator, as it is in the principles which render these necessary to the system, that we can be most impressed with (for nowhere can we *understand*) the infinitude of his power. When the lesson arises naturally, it is always a delightful, as well as a salutary one; and nowhere is there perhaps a more striking instance than in one of those powers over which the wading-bird is in part set as a check—the power of multiplication in fishes. If that power could act without limitation for the space of a very few years, the produce of the fish in any one of our rivers, nay, of any one species of them, would build the valley of that river mountain height with fishes.

"The average rate of increase in river fishes is more than fifteen thousand fold to the single fish, at the single spawning; but we shall call it ten thousand: then let us propose the question, 'In what time would the productive power of a single pair of fishes, if it could act unrestrained, convert the matter of the whole solar system into fish, on the supposition that they spawned at the age of three years, and that all but the last brood died in the course of the time?'

The sum of the diameters of all the bodies in the solar system—sun, planets, and satellites—is about one million of miles; and as the average of the matter which these bodies contain is not very much heavier, bulk for bulk, than water, the cube of a million, instead of the sphere inscribed in that cube, will be more than enough for expansion, in order that the matter might be as light as fish. It should be *the sum of the cubes,* which is only *a small fraction of the cube of the sum;* but no matter.

"From 150 to 200 fishes to the solid foot will be ample allowance, and that will require for the solid mile

1,000,000,000,000,

or for the whole solar system

1,000,000,000,000,000,000,000,000,000,000;

that is, a larger number than the whole human race could have counted ever since the creation. But let us apply the productive power of our two fishes to it. They multiply by 10,000 every three years; and, therefore, every four 0's in the former number will answer to three years. There are between seven and eight; take the larger, or eight; and in twenty-four years the productive power of fish would, not in the whole number, but the last brood from a single pair, convert into fish as much matter as there is in the whole solar system, sun, planets, satellites, altogether!

"The conclusion is abundantly startling, and yet it is far—to our comprehension, infinitely far—below the truth. It is one of the lowest rates, in a single one out of countless myriads, and that one greatly under-estimated. What, then, shall we think of the whole!"

THE COMMON SANDPIPER.*

A writer in the vicinity of Clithoroe, in Lancashire, says, "The Common Sandpiper breeds with us; and I, this year, started an old one from her nest, at the root of a fir-tree. She screamed out, and rolled about in such a manner, and seemed so completely disabled, that, although perfectly aware that her intention was to allure me from her nest, I could not resist my inclination to pursue her, and, in consequence, I had great difficulty in finding the nest again. It was built of a few dried leaves of the Weymouth pine, and contained three young ones just hatched, and an egg, through the shell of which the bill of the young chick was just making its way; yet, young as they were, on my taking out the egg to examine it, the little things, which could not have been out of their shells more than an hour or two, set off out of the nest with as much celerity as if they had been running about a fortnight. As I thought the old one would abandon the egg if the young ones left the nest, I caught them again, and covering them up with my hand for some time, they settled down again. Next day all four had disappeared."

THE SPOTTED SANDPIPER.†

Audubon, in his Ornithological Biography, thus refers to a power possessed by birds,—that of being able to move their eggs when danger threatens: "My esteemed friend, Thomas Macculloch of Picton, Nova Scotia, having transmitted to me a curious account of the attachment of one of these birds to her eggs, I here insert it with pleasure. 'Being on an excursion to the Hardwood Heights, which rise to the west of Picton, my attention was attracted by the warble of a little bird, which appeared to me entirely new, and which proceeded from a small thicket a short way off. Whilst crossing an intervening meadow, I accidentally raised a spotted sandpiper from its nest, and having marked the spot, I hastened forwards; but the shyness of the object of my pursuit rendered all my efforts unavailing, and, returning to the nest I had just left, I expected to find it still unoccupied; but the sandpiper had again resumed her place, and left it with great reluctance on my near approach. The nest contained four eggs, which I determined to remove on my return at night, and for the purpose of preventing the bird sitting again upon them, I placed a number of stones in a slanting position over the nest, and so close that it was impossible for the bird to get into it. On my return in the evening, however, I observed the little creature rise from beside the stones apparently in greater trepidation than ever, and more anxious to draw me away by the exhibition of all those little arts which they practise for this purpose. On examining the spot I was very much surprised to find that the poor thing had not only hollowed out a new nest, but had actually succeeded in abstracting two eggs from the other nest. How the bird had contrived to move the eggs I cannot conceive, as the stones remained unaltered. This attachment to its nest and eggs appeared to me more singular as the bird had but just commenced incubation, the eggs exhibiting very little appearance of the young.'"

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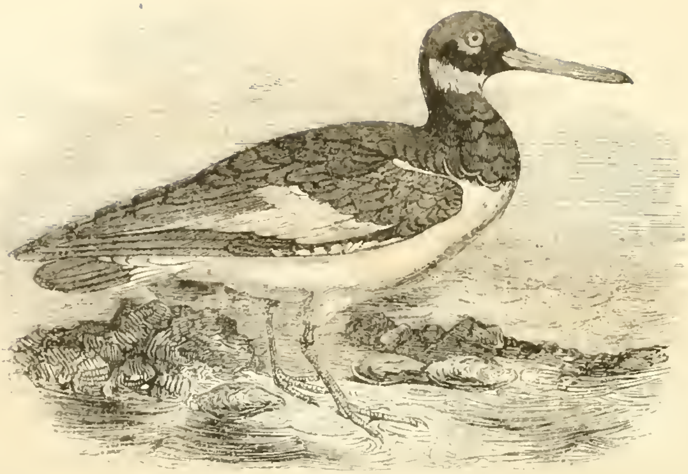
* Tringa Hypoleucos.—Penn.

† Tringa Macularia.—Penn.



THE PIED OYSTER-CATCHER.*

The Oyster-catchers sit quietly in pairs the chief part of the day on the banks or islands of shingle about the river or on the shore, but resort in the evening to the sands in large flocks. Mr. St. John, who has carefully observed them in the Highlands, remarks:—"I have often been puzzled to understand why, during the whole of the breeding season, the oyster-catchers remain in large flocks along the coast, notwithstanding their duties of hatching and rearing their young. When all the other birds are paired off, they still every now and then collect in the same numbers that they do in winter.

"They lay very large eggs, of a greenish-brown colour, mottled with black. Both these birds and pewits soon become tame and familiar if kept in a garden or elsewhere, watching boldly for the worms turned up by the gardener when digging. The oyster-catcher's natural food appears to be shell-fish only; I see them digging up the cockles with their powerful bill, or detaching the small mussels from the scarps, and swallowing them whole, when not too large; if, however, one of these birds finds a cockle too large to swallow at once, he digs away at it with the hard point of his bill till he opens it, and then eats the fish, leaving the shell.

"It is a curious fact with regard to this bird, that if it drops winged in the sea, it not only swims with great ease, but dives, remaining under water for so long a time, and rising again at such a distance, that I have known one escape out to sea in spite of my retriever, and I have watched the bird swim gallantly and with apparent ease across the bay, or to some bank at a considerable distance off. The feet of the oyster-catcher seem particularly ill-adapted for swimming, as the toes are very short and stiff in proportion to the size of the bird. Most of the waders, when shot above the water and winged, will swim for a short distance, but generally with difficulty; none of them, however, excepting this bird, attempt to dive.

"When in captivity the oyster-catcher eats almost anything that is offered to it. From its brilliant black and white plumage and red bill, as well as from its utility in destroying slugs and snails in the garden, where it searches for them with unceasing activity, it is both ornamental and useful, and worthy of being oftener kept for this purpose where a garden is surrounded by walls; it will, if taken young, remain with great contentment with poultry without being confined. I have found its nest in different localities, sometimes on the stones and sometimes on the sand close to high-water mark, and very often on the small islands and points of land about the river."

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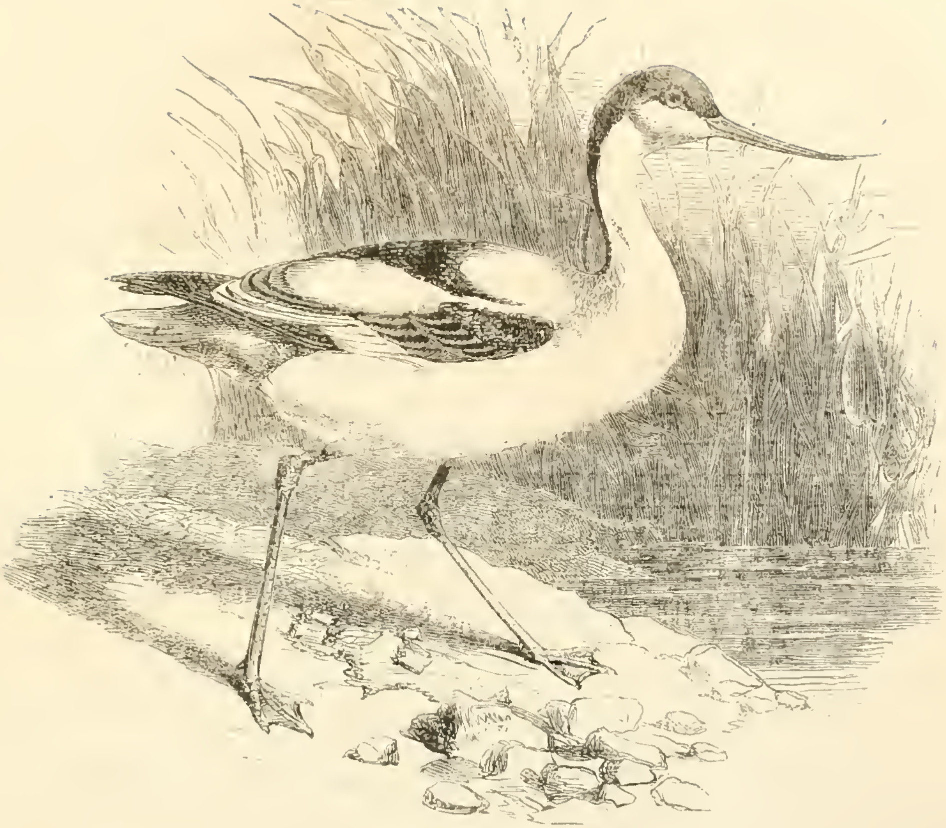
* Hæmatopus Ostralegus.—Linn.



THE AVOCET.*

The Avocet, so singular in its appearance, is not destitute of beauty, its beak, which has been compared to a thin piece of elastic whalebone, and its feet, attracting particular attention. "This bird," says Mr. Yarrell, "is apparently more rare now than formerly. Sir Thomas Brown says they were not uncommon in his time in the marshy lands of Norfolk; and some years ago I was told that more than twenty specimens were received at Leadenhall Market for sale within one month; but now scarcely an example appears once in a year: the last I heard of was in the spring of 1837."

Mr. Markwick, in his "Catalogue of the Birds of Sussex," printed in 1795, states, that the avocet is not uncommon on that sea-coast in summer, but he does not recollect having seen it in winter. "That it breeds here," he remarks, "I have been an eye-witness; for I remember that, several years ago, I found in the marshes near Rye a young one of this species, which appeared to have been just hatched; and I took it up in my hands, whilst the old birds kept flying around me. I have also seen it in the summer on the sea-coast at Bexhill."

"The avocet," says Mudie, "is one of the most beautiful instances of adaptation in the whole range of animated nature; and it is not the less so that it is somewhat out of the way of our ordinary speculations and conclusions upon that subject. According to ordinary observation, and familiarity with the tools which, in very humble and distant imitation of the mechanical contrivances of nature, human artists use, we at once admit that the beaks of hawks and parrots, and the bills of ravens and bitterns, must be efficient instruments; but the peculiar organisations with which the crossbill and the avocet are furnished, are apt to strike us at first sight as awkward and ungainly. When, however, we come to study their application, we find that the real subject of our criticism is our own ignorance, and that we pity or despise only because we do not understand; and that in everything which nature produces, be it single organ, entire animal, or whatever it may, we always must admire, and not admire only, but be delighted to the full extent of our knowledge. The doctrine of *optimism*, or 'all is best,' the sentence of approbation which the Creator pronounced upon the new-made world, still holds true, and will, amid all changes, hold true to the end, in all that creation, save the conduct of man. Nor can it be otherwise; because all else proceed upon the implanted instinct—the very law and constitution of their nature, from which they can no more deviate than lead can swim or air sink in water. But man, proceeding by reason, or which is the same thing, by analogy or comparison, in which his own knowledge is always the standard, cannot well be right beyond the bounds of that knowledge, and may be wrong within them.

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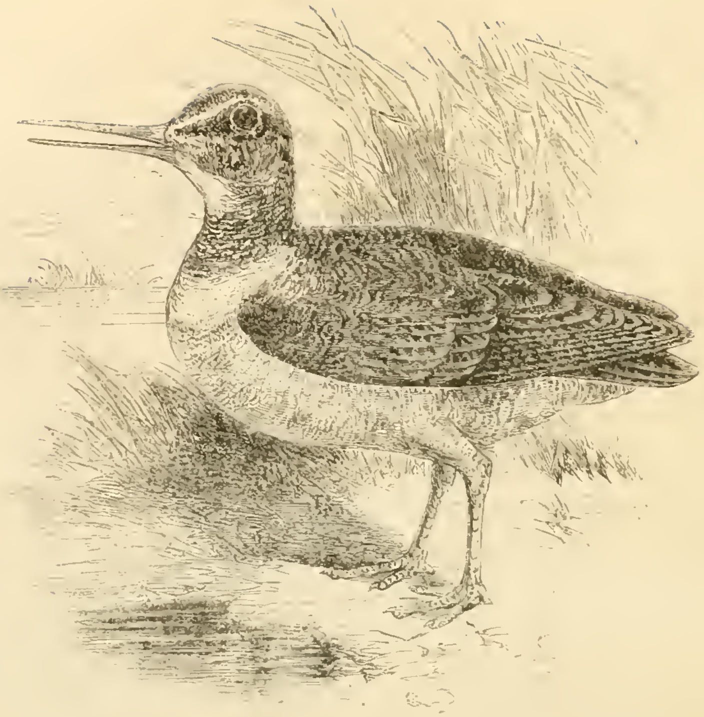
* Recurvirostra Avosetta.—Penn.

"It was always an interesting bird, from the peculiarities of its form and manners; and of late there is added to it the additional interest of comparative rarity as a British bird. Ten or twelve years ago, it was no uncommon occurrence to find a dozen of avocets in Leadenhall Market in one week, or even all at once, in the season of the fen-birds; but now there are only one or two in the course of the year.

"As is the case with the other fen-birds, the avocet breeds in the herbage on the borders of the fen; but its feeding-grounds, and also its mode of feeding, are peculiar. The little runs or water-courses, which cross the loose sand or sludge, and which always contain a considerable quantity of spawn, larvæ, or other animal matters, according to the time of the year, are the places which it frequents. It can swim, as indeed all birds that have close plumage on the under part can do less or more; but it perhaps does not swim voluntarily in any instance, and it never swims when it is feeding. It is not adapted for that, as the action of both the body and the bill require a fulcrum of something more stable than water. Swimming in still water, the bird could not scoop, as the stroke of the bill would merely drive the body backwards; and, as it feeds against the stream, its moving would be like that of a man attempting to force a boat against the stream by placing his pole upwards, and by that means adding his own exertion to the downward force of the current.

"The avocet wades up the shallow stream, and, only that its strokes are equally effective right and left, its action is not unlike that of a mower. Its legs are long, and placed far asunder, and it proceeds by long and slow strides. Suppose the foot on one side advanced and planted, and the one on the other side in the rear to the full extent of its stride: the axis of its body will in that position be obliquely across the run, with the head toward the side of the rear foot, and the tail to that of the advanced one, both feet being nearly in the line of the centre of the run; and if we suppose the left foot to be the one in advance, the bill will be over the right side of the run. The bird then bends its neck a little to the left and downwards, and immediately advancing the right foot, it swings the body upon the left as a pivot, the bill scooping a transverse curve, and impelled by the swing of the body. As soon as the right foot is planted, or rather contemporaneously with the planting of it, the bird elevates its bill, in order that whatever food has been scooped up by the bill may be conveyed to the mouth; and that part of the process is very soon over, as the curve of the bill is not a portion of a circle, but of what geometers call the 'curve of quickest descent.' The bill is immediately lowered with the point toward the right, and the advance of the left foot, and the swing of the body upon the right one, make another sweep in the opposite direction. In this way the bird advances up the run, scooping alternately left and right, with ease, with effect, and even with a grace almost unparalleled in the action of birds. It is indeed one of the most beautiful instances of animal mechanics that can possibly be imagined, and the motions are so performed as that they can all be seen."

Worms, aquatic insects, and some crustaceous animals, yield the food for which the avocet searches diligently on soft sand or mud, and sometimes wades in the waters. It is stated that the peculiar marks in the sand, arising from the singular form of the beak, while the bird is in pursuit of its prey, may be observed. The character of the beak, and the stooping action of the bird, have led to the provincial names it has received of "the Scooper," and "the Cobbler's-awl Duck."



THE WOODCOCK.*

The Woodcock is a native of the northern provinces of continental Europe, but instances are known of its remaining in England to breed, thus passing the summer with us. It is, however, strictly speaking, a winter visitor to our shores. "The first autumnal flight of the woodcock," says Selby, "on its retreat from the northern countries of Europe, where it breeds and passes the summer, generally takes place towards the end of September, or the beginning of October; but as this consists of birds whose flight is directed to more southern latitudes than our islands, a few stragglers only remain; as the flight, after resting for a day or two, proceeds on its course to Portugal, and so onwards to the furthest limit of its equatorial movement. The direction taken by such a great and successive column of these birds, under migration from the north to the southern parts of Europe and northern Africa, being in a great measure intersected by the south-western coasts of England and Ireland, accounts for the abundance of them in Devonshire and Cornwall, and the countries thus situated, and the still greater numbers found in the southern and western districts of Ireland, compared with the other parts of the kingdom.

"It is thus, also, that woodcocks are generally first observed in these positions, and sometimes long before they are seen in England or Scotland. The succeeding flights, which continue at intervals during October and the two following months, becoming each more limited in extent, the whole country gradually receives its accession of winter visitants, those that take up their haunt in the northern counties of England and Scotland seldom arriving before the middle of November, or the beginning of December; the earlier flights, when they do alight in the country, merely remaining for a day, and then passing on to the southward. From this latter circumstance, the search for woodcocks

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* Scolopax Rusticola.

GROUP OF WATER FOWL.

in Northumberland, in the beginning of the season, is very uncertain, and to ensure success, attention must be paid to the state of the weather and the direction of the wind.

These birds land on our shores in the night, or in dark misty weather, for they are never seen to arrive, but are frequently discovered next morning in any ditch which affords them shelter after the extraordinary fatigue occasioned by the adverse gales which they often encounter in their aerial voyage. They do not remain near the shores longer than a day, when they are sufficiently recruited to proceed inland, and they visit the same haunts which they left in the preceding season. In temperate weather they retire to mossy moors, and high, bleak mountainous parts; but as soon as the frost sets in and the snows begin to fall, they seek lower and warmer situations, with boggy grounds and springs, and little oozing mossy rills which are rarely frozen, where they shelter in close bushes of holly and furze, and the brakes of woody glens, or in dells which are covered with underwood. Here they remain concealed during the day, and remove to different haunts, feeding only in the night.

Residing in the eastern part of Northumberland, and only four or five miles from the sea, Mr. Selby also says, "I have found that these birds always come over in the greatest bodies in hazy weather, with little wind, and that blowing from the north-east; and it is probable that they then find the upper region of the atmosphere, in which they fly, freer from counter currents of air than in more open weather. After a night of this description, I have frequently met with great numbers upon the edges of plantations, in hedges, and even in turnip-fields, and enjoyed excellent sport for the day; but on seeking, on the following morning, for a renewal of similar success, I have not found a single bird, the whole flight having proceeded on their course during the intervening night. It is during this time that woodcocks, like most migratory birds, perform their journeys; and it seems probable that those which halt upon the eastern coast of Scotland, and the northern counties of England, have completed their task from shore to shore between sunset and sunrise, as they appear but little fatigued on their arrival, provided the weather has been calm. The distance of the coasts of Norway and Sweden, from whence these visitors are supposed to come, offers no objection to this supposition, as a continued flight of eight or ten hours, even at a rate inferior to what I conceive they are capable of accomplishing, would suffice for the transit. Another argument in favour of this supposition is, the high state of condition in which the birds generally arrive on our shores, especially at an advanced period of the season, by no means indicating the wasting effects of very long-continued exertions. It appears that they fly at a considerable altitude, as indeed most birds do when performing their migratory movements. A respectable person who lived upon the coast, and who, being a keen pursuer of wild-fowl, was in the habit of frequenting the sea-shore at an early hour in the morning, assured me that he had more than once noticed the arrival of a flight of woodcocks coming from the north-east just at day-dawn. His notice was first attracted by a peculiar sound in the air over his head, that, upon attending to, he found proceeded from birds descending in a direction almost perpendicular; and which, upon approaching the shore, separated, and flew towards the interior; these he pursued and shot, and which proved, as he surmised by the view he had of them as they flew past him, to be woodcocks."

The author of "Wild Sports of the West" says: "The woodcock-shooting in the West of Ireland is acknowledged to be very superior; and when the flight has been large, and the season is sufficiently severe to drive the birds well to cover, there is not, to a quick eye, more beautiful shooting in the world. Some of the covers are copses of natural wood, situated in the very centre of the mountains; consequently, when the snow falls, every woodcock for miles around deserts the heath, and seeks the nearest shelter. Then will the sportsman be amply repaid for his labour. From a copse of not more than thirty acres extent, I have seen fifty couple of woodcocks flushed; and as several excellent covers lay in the immediate vicinity, it was no uncommon thing for two or three guns to bring home twenty—nay, thirty couple. I have known a party fire a number of shots that would appear incredible; and I have more than once expended my last charge of powder, and left, for want of ammunition, one or two copses untried."

Daniels has thus described the mode of feeding these birds, as observed in an aviary at St. Ildephonso, in Spain:—"There was a fountain perpetually flowing to keep the ground moist, and trees planted for the same purpose; fresh sod was brought to them, the richest in worms that could be found. In vain did the worms seek concealment; when the woodcock was hungry, it discovered them by the smell, stuck its beak into the ground, but never higher than the nostrils, drew them out singly, and, raising its bill into the air, it extended upon it the whole length of the worm, and in this way swallowed it smoothly, without any action of the jaws: this whole operation was performed in an instant, and the action of the woodcock was so equal and imperceptible, that it seemed doing nothing; it never missed its aim: for this reason, and because it never plunged its bill beyond the orifice of the nostrils, it was concluded that the bird was directed to its food by smell."

THE SNIPES.

There are several birds bearing the general name of Snipe, and some of these we shall proceed to describe.

THE GREAT SNIPE.*

This bird seems long to have been confounded with the Common Snipe, and only to have been distinguished from it as the result of careful examination. It is often called the Double or Solitary Snipe. Sir Humphrey Davy remarks:—"An excellent sportsman, and good observer, informs me, that in the great royal decoy, or marsh-preserve, near Hanover, he has had ocular proofs of double snipes being raised from the nest there; but these birds require solitude and perfect quiet, and, as their food is peculiar, they demand a great extent of marshy meadow. Their stomach is the thinnest amongst birds of the *Scolopax* tribe; and their food seems to be entirely the larvæ of *Tipulæ*, or congenerous flies."

The following particulars, in reference to this bird, were given to Mr. Hewitson by Mr. Hay:—"There is no doubt that by far the greater number of the great snipe retire to the swamps of the north to breed; still a considerable number are spread over the fens and morasses of Holland, and have hitherto escaped observation during the time of breeding. It may, however, be met with during that season, though not in great numbers, in the marshy districts lying between Gouda and Gorinchern, and an extensive fenny tract, abounding in peat bogs, in the eastern part of Dutch Brabant." A few of these birds breed in Germany, and they have been found in France, Holland, Switzerland, and Italy. Their length is about twelve inches.

THE JACK SNIPE.†

This is one of Britain's regular winter visitants. It is a small species, being only about one-half the size and weight of the common snipe, that is, about two ounces. It is a very beautiful little bird; the scapulars, rump, and other parts of the back being glossed with rich metallic reflexions of purple, bronze-colour, and green.

At the season when almost all birds fly readily, and when some species, which are dispersed and obscure in the breeding season, congregate together and are much in sight and upon the wing, the jack snipe lurks and conceals itself in the herbage, and will almost allow itself to be trampled upon before it will take wing. In winter it keeps much more under cover, and further into the marsh than the common snipe. Sir Humphrey Davy was informed at Copenhagen, that the jack snipe certainly breeds in Zealand, and he saw a nest with its eggs, said to be from the Island of Sandholm, opposite Copenhagen. He says: "I have no doubt that this bird sometimes makes its nest in the marshes of Holstein and Hanover. The jack snipe feeds upon smaller insects than the common snipe: small white larvæ, such as are found in black bogs, are its favourite food, but I have generally found seeds in its stomach, once hempseeds, and always gravel."

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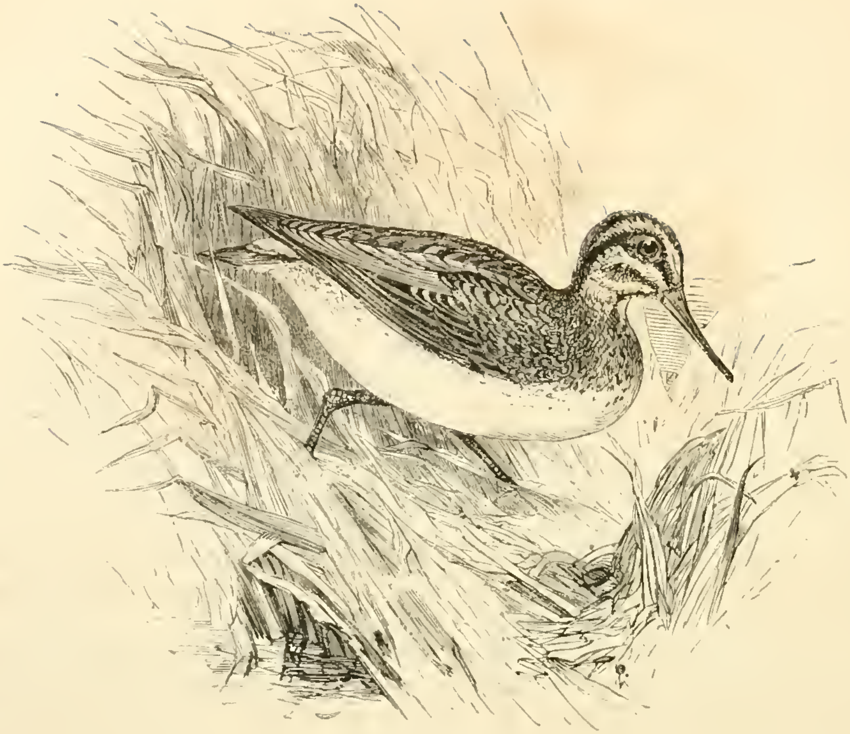
* Scolopax Major.—Penn.

† Scolopax Gallinula.



THE COMMON SNIPE.*

This bird, though a winter visitant, remains in numbers constantly in Britain, merely changing their abodes according to the state of the weather, or the scarcity and abundance of food in different localities. The nest is found in a tuft of rushes or heath, in the midst of the moorland or marsh.

Mr. Selby says: "In addition to our native snipes, great flights come annually from Norway and other northern parts of Europe; and in Northumberland they arrive in the greatest numbers in the beginning of November. They seldom remain long in one situation, moving from place to place, under the regulation of various causes; so that the sportsman, who has enjoyed excellent snipe-shooting one day, may find the same spots entirely deserted on the following. Towards the end of March, or beginning of April, snipes, having nearly perfected their summer or nuptial plumage, select appropriate places for nidification, and the male bird commences his calls of invitation for a mate. These are always uttered upon the wing, and consist of a piping or clicking note, often repeated, and accompanied at intervals by a humming or bleating noise not unlike that of a goat,† apparently produced by a peculiar action of the wings, as the bird, whenever this sound is emitted, is observed to descend with great velocity, and with a trembling motion of the pinions. At this season it soars to an immense height, remaining long upon the wing; and its notes may frequently be heard when the bird itself is far beyond the reach of sight. These flights are performed at intervals during the day, but more commonly towards the evening, and are continued during the whole time that the female is engaged in incubation."

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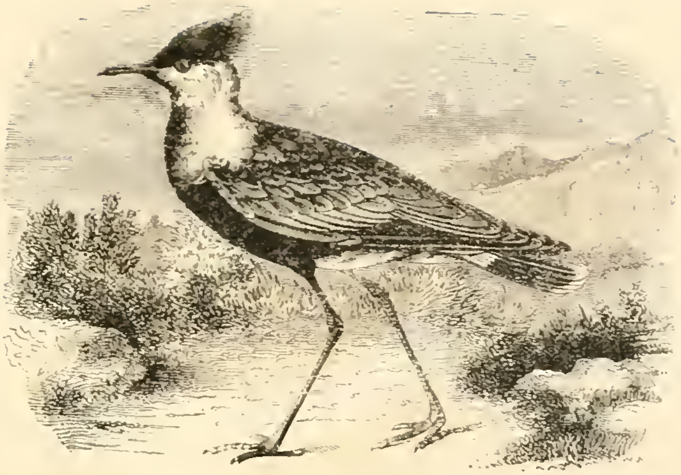
* Scolopax Gallinago.

† In France, one of the names by which the Common Snipe is known, is that of "Chèvre volant."



THE RUFF.*

In consequence of the ornamental plumes on the neck during the breeding season, the male is called the Ruff; while the female, to whose attire no such addition is made, is termed the Reeve.

Montague says: "The long feathers on the neck and sides of the head, in the male, that constitute the ruff and auricles, are of short duration, for they are scarcely completed in the month of May, and begin to fall the latter end of June. The change of these singular parts is accompanied by a complete change of plumage; the stronger colours, such as purple, chestnut, and some others, vanish at the same time, so that in their winter dress they become more generally alike, from being less varied in their plumage; but we observed that those who had the ruff more or less white, retained that colour about the neck after the summer or autumnal moulting. We noticed that in confinement their annual changes never varied; every spring produced the same coloured ruff and other feathers, but the tubercles on the face never appeared. A young male that was taken destitute of a ruff in the breeding season, whose plumage was mostly cinereous, except about the head and neck, put on the ruff in confinement the next spring for the first time, which was large, and the feathers were a mixture of white and chestnut; the scapulars and breast also marked with chestnut; and in the succeeding autumnal moulting he re-assumed his former cinereous plumage."

The same writer observes, that "the trade of catching ruffs is confined to few persons, and scarcely repays their trouble and the expense of nets. These people live in obscure places on the verge of the fens, and are found out with difficulty; for few, if any birds are ever bought but by those who make a trade of fattening them for the table. Mr. Towns, the noted feeder at Spalding, assures us his family had been a hundred years in the trade; that they had supplied George II. and many noble families in the kingdom. He undertook, at the desire of the late Marquis of Townsend, when that nobleman was Lord Lieutenant of Ireland, to take some ruffs to that country; and actually set off with twenty-seven dozen from Lincolnshire, left seven dozen at the Duke of Devonshire's at Chatsworth, continued his route across the kingdom to Holyhead, and delivered seventeen dozen alive in Dublin, having lost only three dozen in so long a journey, confined and greatly crowded as they were in baskets, which were carried upon two horses. During our stay at Spalding, we were shown into a room where there were about seven dozen males and a dozen females, and of the former there were not two alike. Our intrusion to choose some birds drove them from their stands, and compelling some to trespass upon the premises of others, produced many battles. It is a remarkable character of these birds, that they feed most greedily the moment they are taken; a basin of bread and milk, or boiled wheat, placed before them, is instantly contended for, and so pugnacious is their disposition, that they would starve in the midst of plenty, if several dishes of food were not placed amongst them, at a distance from each other. Their actions in fighting are very similar to those of a game-cock; the head is lowered, and the beak held in a horizontal direction; the ruff, and indeed every feather, more or less distended, the former sweeping the ground as a shield to defend the more tender parts, the auricles erected, and the tail partly spread; upon the whole, assuming a most ferocious aspect. When either could obtain a firm hold with the bill, a leap succeeded, accompanied by a stroke of the wing; but they rarely injured each other.

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* Tringa Vanellus. Machetes Pugnax.—Cuv.

"Few ruffs, comparatively speaking, are taken in the spring, as the old birds frequently pine, and will not readily fatten. The principal time is in September, when the young birds are on the wing; these are infinitely more delicate for the table, more readily submit to confinement, and are less inclined to fight. If this plan was generally enforced by the proprietors of fen-land, or made a by-law amongst themselves, the breed would not be so reduced; but there are still fowlers who make two seasons, and by catching the old birds in the spring, especially the females, verify the fable of the goose and the golden eggs; the destruction of every female in the breeding season is the probable loss of four young.

"The manner of taking these birds is somewhat different in the two seasons: in the spring the ruffs *hill*, as it is termed—that is, they assemble upon a rising spot of ground, contiguous to where the reeves propose to deposit their eggs; there they take their stand, at a small distance from each other, and contend for the females—the nature of polygamous birds. This hill, or place of resort for love and battle, is sought for by the fowler, who from habit discovers it by the birds having trodden the turf somewhat bare, though not in a circle as usually described. When a hill has been discovered, the fowler repairs to the spot before the break of day, spreads his net, places his decoy birds, and takes his stand at the distance of about one hundred and forty yards or more, according to the shyness of the birds. The net is what is termed a single clap-net, about seventeen feet long and six feet wide, with a pole at each end: this, by means of uprights fixed in the ground, and each furnished with a pulley, is easily pulled over the birds within reach, and rarely fails taking all within its grasp; but in order to give the pull the greatest velocity, the net, if circumstances will permit, is so placed as to fold over with the wind; however, there are some fowlers who prefer pulling it against the wind for plovers. As the ruffs feed chiefly by night, they repair to the frequented hill at the dawn of day, nearly all at the same time, and the fowler makes his first pull according to circumstances, takes out his birds, and prepares for the stragglers who traverse the fens and have no adopted hill; these are caught singly, being enticed by the stuffed birds. These stuffed skins are sometimes so managed as to be moveable by means of a long string, so that a jerk represents a jump, a motion very common among ruffs, who, at the sight of a wanderer flying by, will leap or flit a yard off the ground, by that means inducing those on wing to come and alight by him.

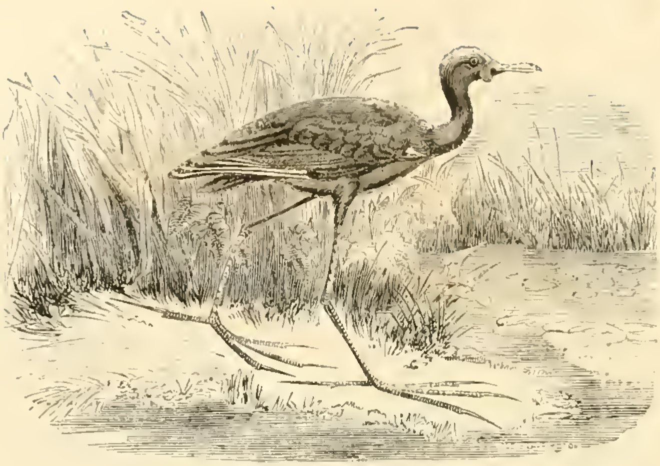
"When the reeves begin to lay, both those and the ruffs are least shy, and so easily caught that a fowler assured us he could, with certainty, take every bird in the fen in the season. The females continue this boldness, and their temerity increases as they become broody; on the contrary, we found the males at that time could not be approached within the distance of gunshot. The females, the reeves, begin laying their eggs the first or second week in May, and we have found their nest with young as early as the

3rd of June. By this time the males cease to go to hill. The nest is usually formed upon a tump, in the moist swampy places, surrounded by coarse grass, of which it is also formed. The eggs are four in number, of an olive colour, blotched and spotted with clove and liver-brown; one inch seven lines in length, by one inch one line and a half in breadth. The young, while covered with down, are prettily spotted, soon leave their nest, and are difficult to find without a good dog. The autumnal catching is usually about Michaelmas, at which time few old males are taken, from which an opinion has been formed, that they migrate before the females and young. It is, however, more probable that the few which are left after the spring fowling, like other polygamous birds, keep in parties separate from the female and her brood till the return of spring." Montague took the trouble of transporting several of these birds, both males and females, with him from Lincolnshire into Devonshire; some of them lived three years in captivity, and one of them four years. He says, that "in confinement the males paid no attention to the reeves, except to drive them from their food; they never attempted to dispute with any other species, but would feed out of the same dish with land-rails, and other birds confined with them, in perfect amity."

HEAD OF TRINGA HYPERBOREA.

FOOT OF TRINGA HYPERBOREA.

Another family of the order Grallatores is formed of the *Rallidæ*, a group consisting of the rails, coots, jacanas, &c.



THE COMMON GALLINULE.*

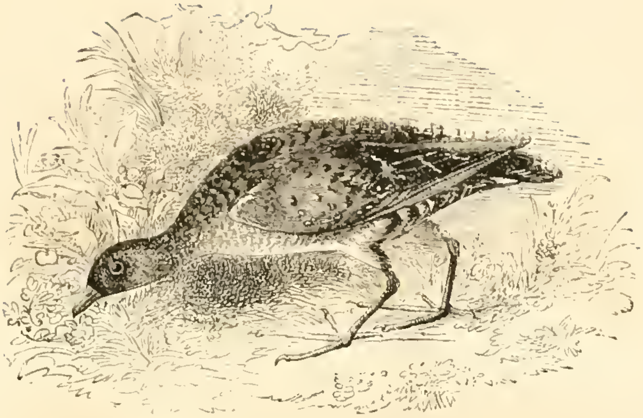
This bird, often called the Moor-hen or Water-hen, is disposed over Europe generally, and is also found in many parts of Asia and Africa. It inhabits ponds, slow-moving and deep waters, canals, &c., where the borders are covered with luxuriant herbage, osier-beds, or reeds.

The following incident is given by Mr. Waterton :—"In 1826, I was helping a man to stub some large willows near the water's edge. There was a water-hen's nest at the root of one of them. It had seven eggs in it. I broke two of them, and saw that they contained embryo chicks. The labourer took up part of the nest, with the remaining five eggs in it, and placed it on the ground, about three yards from the spot where we had found it. We continued in the same place for some hours afterwards, working at the willows. In the evening, when we went away, the old water-hen came back to the nest. Having no more occasion for the labourer in that place, I took the boat myself the next morning, and saw the water-hen sitting on the nest. On approaching the place, I observed that she had collected a considerable quantity of grass and weeds, and that she had put them all around the nest. A week after this I went to watch her, and saw she had hatched; and, as I drew nearer to her, she went into the water, and the five little ones along with her."

The nest of this bird, which is rather large, is rudely formed of reeds and rushes close to the water's edge, but generally concealed among the herbage. Frequently there are two, and sometimes three, broods in a year; but the birds are not so numerous as it might be supposed, from the various casualties which diminish the young. Often are the eggs washed away by the summer floods; sometimes the heron, contrary to its usual habit, swims a little way out to capture the young bird; while pike and even trout will banquet on the progeny of the gallinule. Very soon after the young are hatched, they are able to proceed to the water. The mother leads them forth in the morning and toward evening; but when the day is hot, and during the night, she returns with them to the nest, and covers them with her wings.

The flight of this bird is heavy and awkward, the legs hanging down; but it rises readily, and can keep up a long course on the wing. While walking, it flits up its short tail, so as to display the white under-coverts very conspicuously.

* Gallinula Chloropus.



THE SPOTTED GALLINULE.*

The bird that has just been described is dispersed over Europe generally, and is found also in many parts of Asia and Africa. It is about the size of a pigeon, and it weighs about a pound. The upper plumage is dark olive green, inclining to black; the under plumage is deep bluish-gray, with white on the under tail-coverts and the edges of the wings, and there is also some dull white on the belly and thighs. The feathers on the flanks, which are loose and pendant, and hang over the upper parts of the thighs, are black, with streaks of white. The bill, which is about an inch in length, is thick and strong, arched in both mandibles towards the tip, and with the upper projecting a little; it is greenish at the tip, and reddish towards the base.

This bird swims gracefully, and dives not only to avoid danger, but often to obtain food, as it has been taken by lines baited for eels. It feeds habitually on insects, aquatic worms, the larvæ of dragon-flies, &c. When suddenly surprised on the bank, where it may often be seen at rest, it dashes into the water, where, half flying, half running over the surface, it makes its retreat. Its actions are smart and lively, and render it an interesting appendage to ornamental sheets of water.

The Spotted Gallinule, of which we now give a representation, is also extensively known. It is found in the southern parts of Russia; it is rare in the north of Germany and in Holland; it is more common in France and Provence; but it is most frequently met with in the southern and eastern parts of Europe.

The spotted gallinule is one of Britain's summer visitants, breeding in marshes overgrown with reeds and sedges. Its nest, formed of coarse aquatic plants, but having a lining of softer materials, is built on the wet ground, and often at the edge of the water. Here it deposits eight or ten eggs, of a pale reddish-white, spotted and speckled with dark reddish-brown. A naturalist says: "There can be no doubt that the spotted gallinule breeds in the marshes of Norfolk. We have seen a considerable number of its eggs in Yarmouth, which, as well as its young, were found in the neighbourhood of that place."

The flesh of a water-hen, in good season, when accustomed to a neighbouring wheat or barley stubble, is juicy and well-flavoured.

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* Rallus Porzana.—Linn.

THE COMMON COOT.*

The manners of this bird, widely spread over Europe, and particularly abundant in Holland, closely resemble those of the common gallinule.

Of the habits of the Coots in autumn and winter, when pursued by the sportsman or the fowler, Colonel Hawker says: "Coots found in rivers are scarcely thought worth firing at; yet they are in great requisition when they arrive for the winter on the coast, from the immense numbers that may be killed at a shot, as they roost on the mud-banks. Coots, when on the coast, usually travel to windward, so that a west wind brings them to the west, and an easterly wind to the east, instead of the contrary, as with other fowl. The plan that I have found best for slaughtering the coots by wholesale is, either to listen for them before daylight, and rake them down at the gray of a white frosty morning, or watch them at some distance in the afternoon, and set into them as late in the evening as you can see to level your gun, taking care, if possible, to keep them under the western light. Coots, instead of drawing together before they fly, like geese and many other fowl, always disperse on being alarmed; and as they generally fly to windward, the gentlemen's system of wild-fowl shooting answers well, which is, to embark with a party, sail down on them, and, as they cross, luff up, and fire all your barrels. When a beginner at wild-sport, I used to be mightily pleased with this diversion. When on the coast, you may easily distinguish coots from wild-fowl by the scattered extent of their line, their high rumps, their rapid swimming, and their heads being poked more forward.

"They are generally sold for eighteen pence a couple, previously to which they are what is called *cleaned*. The recipe for this is, after picking them, to take off all the black down, by means of powdered resin and boiling water, and then to let them soak all night in cold spring water; by which they are made to look as white and as delicate as a chicken, and to eat tolerably well; but, without this process, the skin in roasting produces a sort of oil, with a fishy taste and smell; and if the skin be taken off, the bird becomes dry, and good for nothing. A coot shot in the morning, just after roosting, is worth three killed in the day when full of grass, because he will then be whiter and milder in flavour. A Poole man is very particular about this, as the sale of his coots much depends on it."

HEAD OF FULICA PORPHYRIO.

FOOT OF FULICA PORPHYRIO.—LINN.

The nests of the coot are described as large, and apparently clumsy at first sight, but exceedingly strong and compact. "So firm are some of them," says a naturalist, "that whilst up to my knees in water, they afforded me a seat sufficiently strong to support my weight. From the nature of the materials composing the nest, joined to its situation, it not unfrequently happens that it is torn from its moorings by floods and carried down the stream; and instances have been known of such occurrences taking place, the female continuing to sit on her eggs, which were uninjured. The young are covered with harsh black down on their exclusion from the egg, and take to the water immediately, under the guidance and protection of their parents. The eggs are of a dirty greenish-white, covered with specks and dashes of brown."

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* Fulica Atra.

THE CHINESE JACANA.*

The Jacanas are peculiar to the hotter climates of Asia, Africa, and America, and in their general habits closely resemble the moor-hen. They trip over the weeds which mantle the waters with singular ease and grace, searching for the various aquatic insects which constitute their food.

The most beautiful of them all is the Chinese Jacana, which is found throughout the whole of India. It appears among the Himalayan mountains, wherever it can find an asylum in lakes and morasses; and, with two allied species, it is observed on the Ganges, between Calcutta and Benares. Its length is about twenty-two inches. The head, fore part of the neck, and chest, are white; the back of the neck is of a bright orange-colour, divided from the white by a narrow black line; the shoulders are white; the rest of the plumage is of a deep chocolate-brown. The beak and legs are of a dull olive-green.

FOOT OF THE JACANA.

"The number of these jacanas," says Mr. Swainson, "on the lakes of Brazil, the elegance of their movements, and their fearlessness of man, excite an interest in the traveller who journeys through regions ornamented alone by nature. They are very light birds, and their long toes, spreading over a wide surface, enable them to walk on the floating leaves of aquatic plants with as much facility as if they were on land. In such situations their appearance is really delusive; for their pressure being sufficient to sink the surrounding leaf just below the surface, the birds actually appear to walk upon the water."

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* Parra Sinesis.

THE CORN-CRAKE, OR LAND-RAIL.*

In the rich meadow lands of some parts of Britain, the peculiar cry of this bird may be heard resounding on every side, during the whole or greater part of May. Now the Land-rail seems close at hand, as if the bird were not a yard off; now it is far distant, while other voices in different parts of the meadow keep up the reiterated note, *crake, crake, crake*, from which the English and the Latin names are derived.

Mr. Jesse, in his remarks on this bird, says: " I have met with an incident in the natural history of the corn-crake, which I believe is perfectly accurate, having been informed the bird will put on the semblance of death when exposed to danger from which it is unable to escape. The incident was this:—a gentleman had a corn-crake brought to him by his dog, to all appearance quite dead. As it lay on the ground he turned it over with his foot, and was convinced it was dead. Standing by, however, in silence, he suddenly saw it open an eye. He then took it up; its head fell, its legs hung loose, and it appeared again quite dead. He then put it into his pocket, and before long he felt it all alive, and struggling to escape. He then took it out; it was as lifeless as before. Having laid it again upon the ground, and retired to some distance, the bird in about five minutes warily raised its head, looked round, and decamped at full speed. I have seen a similar circumstance take place with a partridge, and it is well known that many insects will practise the same deception."

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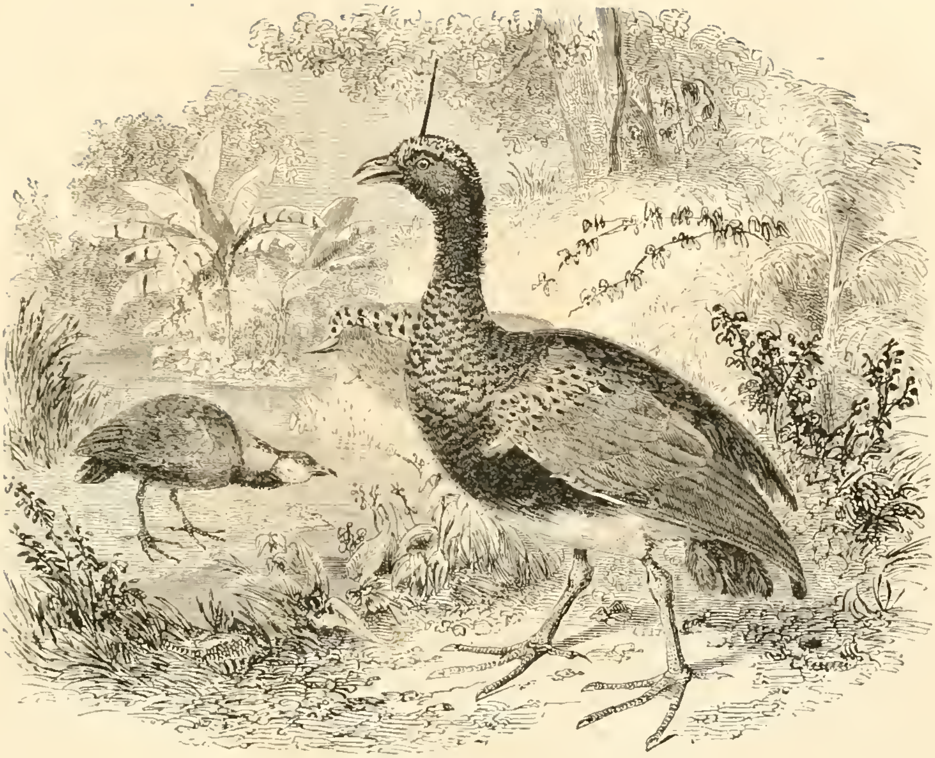
* Gallinula crex.—Penn.



THE HORNED SCREAMER.*

The Linnæan genus of birds, called *Palamedea*, has been placed by Mr. Vigors among the *Grallatores*. The *Palamedea cornuta*, or horned screamer, is a South American bird, larger than a common goose, having a long spear-shaped horn projecting from the forehead. It lives in marshy or inundated places, which it makes to resound with its wild and loud cry.

It does not enter the great woods, perching only momentarily on dead branches. It sends forth shrill and piercing cries, which may be heard at a considerable distance; whence its English name. Bajou states that its food consists only of aquatic plants and seeds; though others, before him, have averred that it also fed on reptiles. It never attacks other birds, and the only use it makes of its arms is, when the males dispute for the possession of the females. Once paired, however, the two quit each other no more; and when one dies, the other soon pines away with grief. The screamers construct their nests in the form of an oven, at the foot of a tree, according to Pison; but Bajou tells us that they make it in bushes, at some distance from the ground, and often in reeds. The female in general lays but two eggs, of the size of those of a goose, and there is but one brood, in the month of January or February, except when the eggs are destroyed by any accident, and then a second takes place in April or May. As soon as the young are in a fit state to fly, they follow the mother, who gradually accustoms them to seek subsistence alone, after which they quit her. The flesh of the young, though black, is good eating; but that of the old is hard, and less agreeable to the taste.

The Kamichi, or Screamers, resemble the Jacanas in many respects, but are much larger. They resemble them in the two strong spurs on each wing; in the long toes and strong claws, especially that of the thumb, which is long and straight, as in the larks;

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* Palamedea Cornuta.—Linn.

but their bill, not much cleft, is but slightly compressed, not swelled, and the upper mandible is slightly arched. Their legs are reticulated.

THE DOTTERELL.[*]

Of this bird Drayton sings :—

> "The Dotterell, which we think a very dainty dish,
> Whose taking makes such sport as man no more can wish;
> For as you creepe, or curve, or lye, or stoupe, or goe,
> So marking you (with care) the apish bird doth doe,
> And acting everything, doth never mark the net,
> Till he be in the snare, which man for him have set."

Nor is this a solitary representation of the Dotterell, which accords rather with poetry than fact. "It has always been considered," says Mr. Selby, "a stupid bird, but for what reason I cannot conceive. I allow that, on its first arrival, it shows but little fear of man; but this, I apprehend, arises more from inexperience of persecution in its native wilds, than from any other cause, and which appears evident from the birds, when harassed and repeatedly fired at, soon becoming too cautious to admit of near approach any longer. Their habits also contribute to render them unwary, for being nocturnal feeders (like many others of the *Chariadriadæ*), they are at rest and asleep during the greater part of the day, in which state also the golden plover (a wary bird when roused), will frequently admit of a close approach. As to the story of the dotterell mimicking the actions of the fowler, by stretching out its leg, wing, or head, when he sets the example, it, without doubt, arose from the motions that they, as well as other birds, usually and most naturally make when roused from a state of repose; and which every one who attends to the habits of the feathered race, must (in flocks of gulls, plovers, tringas, &c.) have frequently observed."

"I will now narrate," says T. C. Heysham, Esq., of Carlisle, "as succinctly as possible, what has fallen under my own observation relative to the habits and economy of this bird. In the neighbourhood of Carlisle, dotterells seldom make their appearance before the middle of May, about which time they are occasionally seen in different localities, in flocks which vary in number from five to fifteen, and almost invariably resort to heaths, barren pastures, fallow grounds, &c. in open and exposed situations, where they continue, if unmolested, from ten days to a fortnight, and then retire to the mountains in the vicinity of the lakes to breed. The most favourite breeding-haunts of these birds are always near to or on the summits of the highest mountains, particularly those that are densely covered with the woolly fringe-moss (*Trichostomum lanuginosum*.—Hedw.), which, indeed, grows more or less profusely on nearly all the most elevated parts of this Alpine district.[†] In these lonely places they constantly reside the whole of the breeding-season, a considerable part of the time enveloped in clouds, and almost daily drenched with rain or wetting mists, so extremely prevalent in these dreary regions; and there can be little doubt that it is owing to this peculiar feature in their economy, that they have remained so long in obscurity during the period of incubation. The dotterell is by no means a solitary bird at this time, as a few pairs usually associate together, and live, to all appearance, in the greatest harmony. These birds do not make any nest, but deposit their eggs, which seldom exceed three in number, in a small cavity on dry ground covered with vegetation, and generally near a moderate sized stone or fragment of rock. In early seasons old females will occasionally begin to lay their eggs about the 26th of

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[*] Caradrius Morinellus.—Penn.

[†] "The favourite breeding-stations of the dotterell are frequently called smittle-places by some of the guides and anglers at Keswick."

May; but the greater part seldom commence before the first or second week in June. It would appear, however, from the following facts, that they vary exceedingly in this respect. On the 19th of July, 1833, a perfect egg was taken out of a female, which had been recently killed on Robinson; and on the 26th of May, 1834, I received four dotterells from Keswick, which had been shot on Great Gavel the day before. In the ovary of one of them I found an egg almost quite ready for exclusion, being a difference of nearly eight weeks. So great a discrepancy, in all probability, is of very rare occurrence; yet it will subsequently appear that eggs recently laid, and a young bird, a few days old, were found on the same day, at no great distance from each other. The males assist the females in the incubation of their eggs. How long incubation continues I have not yet been able to ascertain; but I am inclined to think that it rarely lasts much longer than eighteen or twenty days. A week or two previous to their departure, they congregate in flocks, and continue together until they finally leave this country, which takes place sometimes during the latter part of August, at others not before the beginning of September. A few birds no doubt are occasionally seen after this period; but they are either late broods, or birds that are returning from more northern latitudes. This autumn I visited several breeding-stations on the 25th of August, and again on the 2nd of September, but in neither instance could I observe a single individual.

"Anxious as I have been for several years past to procure the eggs of the dotterell, for the purpose of adding undoubted specimens of so rare an egg to my cabinet, as well as to prove beyond all doubt that this bird breeds in Cumberland; yet it was not until the present year that I had the gratification of accomplishing an object which I have had so long in view. After repeated excursions through the lake district this summer for the express purpose, I was so fortunate as to obtain their eggs in two different localities; namely, three on Whiteside, contiguous to Helvellyn, on the 29th of June, and two on the 5th of July, on Robinson, in the vicinity of Buttermere. The former had been incubated twelve or fourteen days; the latter were only recently laid; and, in both instances, the birds were seen to leave their eggs: one, on quitting them, immediately spread out its wings and tail, which it trailed on the ground a short distance, and then went away without uttering a single note. On this day, 5th of July, 1835, a young bird, a few days old, was also captured.

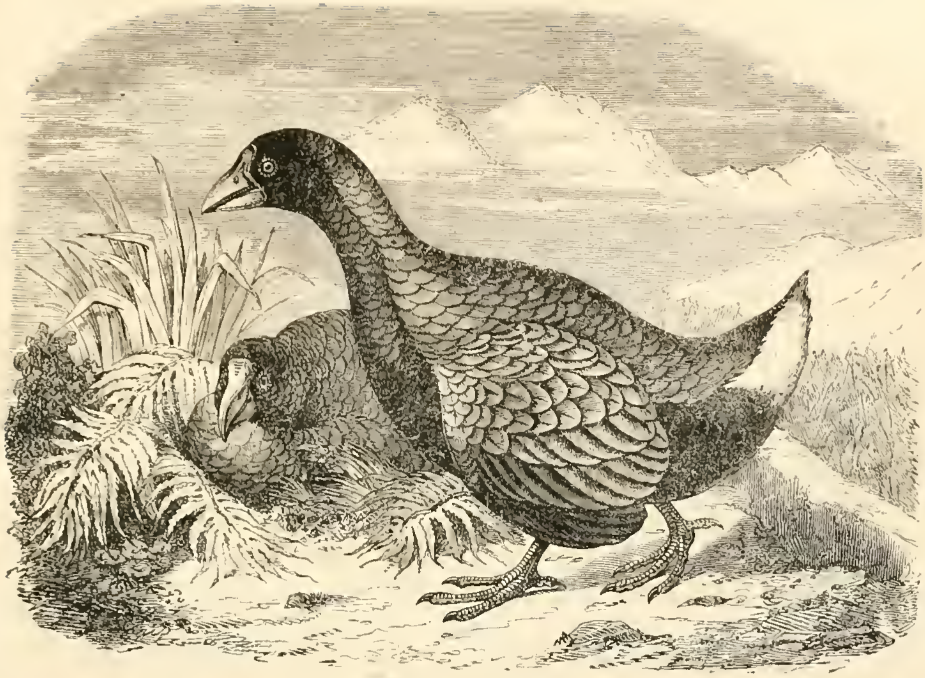
"Having spent a considerable portion of several days on Robinson, in company with a very able assistant, searching for the eggs of the dotterell, I had, of course, ample opportunities of observing their manners; and I flatter myself that the following particulars will be interesting to some of my ornithological readers. On the 3rd of July, we found three or four pair near the most elevated part of this mountain; and on all our visits thither, whether early in the morning or late in the afternoon, the greater part were always seen near the same place, sitting on the ground. When first discovered, they permitted us to approach within a short distance, without showing any symptoms of alarm; and frequently afterwards, when within a few paces, watching their movements, some would move slowly about and pick up an insect; others would remain motionless, now and then stretching out their wings; and a few would occasionally toy with each other, at the same time uttering a few low notes, which had some resemblance to those of the common linnet. In short, they appeared to be so very indifferent with regard to our presence, that at last my assistant could not avoid exclaiming, 'What stupid birds these are!' The female that had young nevertheless evinced considerable anxiety for their safety, whenever we came near the place where they were concealed, and as long as we remained in the vicinity, constantly flew to and fro above us, uttering her note of alarm.

"As soon as the young birds were fully feathered, two were killed for the purpose of examining their plumage; and we found that after they had been fired at once or twice, they became more wary, and eventually we had some little difficulty in approaching sufficiently near to effect our purpose. The moult appears to commence somewhat early in old birds; a male, that was killed on the 25th of July, was completely covered with pen-feathers, and the belly, from incubation, almost entirely bare. The stomachs I dissected were all filled with the *elytra*, and remains of small coleopterous insects, which, in all probability, constitute their principal food during the breeding season.

"These birds, I understand, are getting every year more and more scarce in the neighbourhood of the lakes; and from the numbers that are annually killed by the anglers at Keswick and the vicinity—their feathers having long been held in high estimation for dressing artificial flies—it is extremely probable that in a few years they will become so exceedingly rare, that specimens will be procured with considerable difficulty. I have subjoined the names of some of the principal mountains in this county on which dotterells have been known to breed; and I have also added, as far as practicable, their elevation above the level of the sea, under the idea that this information may prove of some utility to naturalists who may, hereafter, feel inclined to investigate the manners of this species in the same district. The relative positions of these mountains may be seen at a single glance, on referring to Greenwood's excellent Map of the County of Cumberland.

	Feet above the level of the sea.		Feet above the level of the sea.
Helvellyn	3.055	Carrock Fell	2,110
Whiteside		Grassmoor	2,756
Great Dod		Robinson	2,292
Whatson Dod		Gold Scalp	1,114
Saddle-back	2.787	Great Gavel	2,925
Skiddaw	3,022		

Those mountains whose elevations are not given exceed that of Carrock Fell.



THE NOTORNIS.*

This is a specimen of one of the curious birds found only in Australia. The one represented by Mr. Gould, from whose splendid work our engraving was taken, was captured near the Isle of Resolution, by the seal-fishers. Having noticed the marks made by the bird on the snow, they followed it to the place whither it withdrew, when it took flight, running rapidly before the dogs which followed it, and at last captured it. It uttered piercing cries and struggled for a long time. It was kept alive for four days; its body was roasted and eaten by the sailors, who found its flesh of an agreeable flavour.

The *Notornis Mantelli* of Owen, named after the traveller Mantell, who was the first to observe it alive, approaches the Rails in the form of its beak and the general colour of its plumage, and is unlike them in the weakness of its wings; its primary feathers are very short. It cannot fly, but it runs with great speed. It probably has the power of swimming; the thickness of its plumage leads to the belief that it has a preference for damp spots. The head, neck, breast, and upper part of the belly and sides are of a beautiful purple-blue; the back, rump, and upper part of the tail are of a deep green olive, tipped with copper-green; a beautiful blue stripe separates the purple blue of the neck from the green of the back; the lower part of the belly and the thighs are of a dull bluish black; the wings are of a beautiful deep blue; the long feathers are tipped with green, forming a crescent where the wing is extended. The tail is deep green; its under-part white. The beak, talons, and iris are of a brilliant red. The height is two feet.

Much has yet to be learned in reference to this bird. The ornithology of Australia, though far from being so peculiar and anomalous as its mammalogy, contains, nevertheless, many new and singular forms, of which the *Notornis* is an example. Its limited range is a formidable barrier to acquaintance with it, but much will doubtless be accomplished by the sagacity and intelligence of naturalists.

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* Notornis Mantelli.—Owen.

There are a few of the wading birds not yet mentioned, at which we may glance at the close of the description of this interesting order.

THE DUNLIN.*

This bird is common all round the British Islands, and breeds plentifully on the Arctic coasts of America. Its length is about eight inches. It has a mixture of black and ferruginous on the top of the head, the centre of each feather being occupied by the dark colour. The breast is mottled black and white. The tail-feathers, except the two middle ones, which are of a dark-brown, are of an ash-gray.

Mr. Macgillivray, in a communication to Mr. Audubon, says: "About the middle of April these birds betake themselves to the moors, in the northern part of Scotland, and in the larger Hebrides, where they may be found scattered in the haunts selected by the golden plovers, with which they are so frequently seen in company, that they have obtained the name of plovers' pages. In the Hebrides, from this season until the end of August, none are to be found along the shores. The nest is a slight hollow in a dry place, having a few bits of withered heath and grass irregularly placed in it. The eggs are four in number. If, during incubation, a person approaches their retreats, the male especially, but frequently the female also, flies up to meet the intruder, settles on a tuft near him, or runs along and uses the same artifices for decoying him from the nest or young as the plover or ring dotterell. Towards the end of August, the different colonies betake themselves to the sandy shores. On a large sand-ford in Harris, I have at this season seen many thousands at once, running about with extreme activity in search of food. This place seemed a general rendezvous, and after a few weeks the host broke up and dispersed, few, if any, remaining during the winter."

THE CURLEW.†

The genus called *Numenius* is characterised by a long, slender, incurved bill, slightly compressed, and furrowed for three-fourths of its length; it has a blunt tip. The wings are ample. The tarsi are slender, and naked above the joints.

Of the European species Mant says:—

"Along the salt sea's oozy verge,
When wafted high the ebbing surge,
Unsheltered leaves the shelly fry,
Hark! the curlew's tumultuous cry:
Not as, remote from human sight,
In lonely pairs their vernal flight
They speed o'er heathy mountain rude,
Or some waste marsh's solitude,
To the tall grass or bristling reed
Their wild unnestled young to breed;
And now along the peopled coast,
In densely congregated host,
Yet heedful of the thundering gun,
Aloft on bluish legs they run,
Or delve with slender bill and bowed
The yielding sand; or shouting loud,
To warn their comrades of the way,
Lest darkling from the line they stray,
Wake the dull night with startling sounds;
Well might you deem the deep-mouthed hounds
Raised in full cry the huntsman's peal,
Or clamoured for their morning meal."

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* Tringa Variabilis.

† Numenius Arquatus.

Selby, noticing the habits of these birds during their winter sojourning on the coast, observes: "At this season they are remarkable for their shy and watchful character, and, unless by stratagem, can rarely be approached within gun-shot. During the flowing of the tide, they retire to the fields adjoining the coast, where they remain quietly until the ebb has commenced. No sooner has this taken place, than they are seen returning, to seek in the lately covered sands for a new deposit of food; and I have often observed with admiration by what wonderful instinctive feeling they became immediately acquainted with the fact; and have watched, when a certain mark on the shore has become visible, for their reappearance, without once being disappointed in the result, so well do they know their 'appointed times and seasons.'" The curlew is found in India; but in America its place is supplied by a species distinguished by the excessive length of the bill.

THE SANDERLING.*

This bird is found at the edge of the water on most of the sandy shores of the seas of Great Britain and Ireland; but it is met with in many other countries. It is about eight inches in length. Its plumage in winter on the upper surface of the body is of a light ash-gray; but when changing on the return of spring, for its summer attire, it greatly improves in appearance.

Mr. Audubon says: "The Sanderling obtains its food principally by probing the moist sands of the sea-shores with its bill held in an oblique direction. At every step it inserts this instrument, with surprising quickness, to a greater or less depth, according to the softness of the sand, sometimes introducing it a quarter of an inch, sometimes to the base. The holes thus made may be seen on the borders of beaches, when the tide is fast receding, in rows of twenty, thirty, or more; in certain spots, less numerous; for it appears that when a place is unproductive of the food for which they are searching, they very soon take to their wings and remove to another, now and then in so hurried a manner, that one might suppose they had been suddenly frightened. The contents of the stomachs of those which I shot while thus occupied, were slender sea-worms, about an inch in length, together with minute shell-fish and gravel. At other times, when they were seen following the receding waves, and wading up to the belly in the returning waters, I found in them small shrimps and other crustacea." They are well known in America, and have been brought from Asia and Africa.

Major Sabine, in the Appendix to Sir Edward Parry's "First Arctic Voyage," says: "The Sanderling breeds in considerable numbers on the North Georgian Islands; several pairs were killed at different periods of the breeding season, the males and females of which were invariably found to differ in their plumage; the general colour of the female being lighter, and having more cinereous and less of black and reddish marking than that of the male; this is especially the case on the chin, throat, and fore-part of the neck; which may be described in the female as white, with a very slight sprinkling of dark spots, and scarcely any appearance of red; whereas, in the male, the dark colours greatly predominate."

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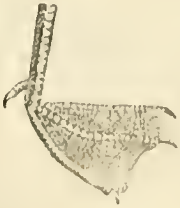
* Charadrius Caliaris.—Penn.

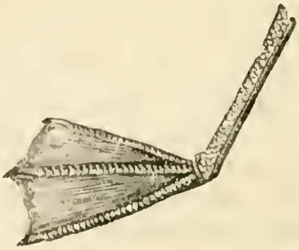
NATATORES.

ORDER VI.—THE SWIMMING BIRDS.

We now arrive at the last Order, containing the birds whose habits are decidedly aquatic, and whose structure has obtained for them the name of Water-Fowl. Their feet indicate their true character.



FOOT OF LESTRIS CATARRACTES.



FOOT OF PROCELLARIA URINATRIX.—SMALL.

Bryant thus addresses one of these birds:—

"Whither, 'midst falling dew,
While glow the heavens with the last steps of day,
Far, through their rosy depths, dost thou pursue
Thy solitary way?

Vainly the fowler's eye
Might mark thy distant flight to do thee wrong,
As, darkly painted on the crimson sky,
Thy figure floats along.

Seekest thou the plashy brink
Of weedy lake, or marge of river wide.
Or where the rocking billows rise and sink
On the chafed ocean-side?

There is a Power whose care
Teaches thy way along that pathless coast,
The desert and illimitable air,—
Lone wandering, but not lost.

All day thy wings have fanned,
At that far height, the cold thin atmosphere,
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

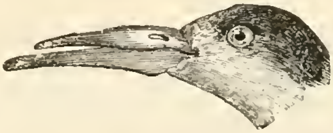
And soon that toil shall end,
Soon shalt thou find a summer-home, and rest
And scream among thy fellows; reeds shall bend
Soon o'er thy sheltered nest.

Thou'rt gone—the abyss of heaven
Hath swallowed up thy form; yet on my heart
Deeply hath sunk the lesson thou hast given,
And shall not soon depart.

He who, from zone to zone,
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone,
Will lead my steps aright."

THE SHEERWATER, OR BLACK SKIMMER.[*]

The bill of this bird has so extraordinary a shape, that, at first sight, it appears as if it were worn and imperfect. Buffon, to whose hasty condemnations we have had occasion to allude, says, in consequence: "This bird, named *Bec-en-ciseaux* (Scissor-bill), can neither bite on the side of the bill nor pick up anything before it, nor peck forwards, its bill being composed of two excessively unequal pieces; the lower mandible, which is elongated and projecting beyond all proportion, much exceeds the upper mandible, which only falls upon it like a razor on its haft. In order to reach anything and seize it with so defective an organ, the bird is reduced to skim the surface of the sea as it flies, and to plough it with the lower part of the bill plunged in the water, so as to catch the fish below and lift it as the bird passes. It is from this *manège*, or rather from this necessary and painful exercise, the only one which could enable it to live, that the bird has received the name of *Coupeur d'eau* (Cut-water) from some observers, whilst the name of scissor-bill has been intended to point out the manner in which the two unequal mandibles of its bill fall one upon the other; of these, the lower, hollowed into a gutter with two elevated trenchant edges, receives the upper, which is fashioned like a blade."


HEAD OF THE SHEERWATER.

Now of all this the structure is absolutely the reverse. Catesby, therefore, justly speaks of it as "a wonderful work of Nature," and thus accurately describes it:—"The under mandible is more compressed than the upper, and very thin, both edges being as sharp as a knife, and is almost an inch longer than the upper mandible, which has a narrow groove or channel into which the upper edge of the lower mandible shuts." The male is about nineteen inches in length. The expanded wings measure twenty-four inches. The female is smaller than the male.

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[*] Rhynchops.—Linn.

Wilson thus describes their mode of taking food on the wing:—"The sheerwater is formed for skimming while on the wing, the surface of the sea for its food, which consists of small fish, shrimps, young fry, whose natural haunts are near the shore and towards the surface. That the lower mandible, when dipped into and cleaving the water, might not retard the bird's way, it is thinned and sharpened like the blade of a knife; the upper mandible, being at such times elevated above the water, is curtailed in its length, as being less necessary, but tapering gradually to a point, that on shutting it may suffer no opposition. To prevent inconvenience from the rushing of the water, the mouth is confined to the mere opening of the gullet, which indeed prevents mastication taking place there; but the stomach or gizzard, to which this business is solely allotted, is of uncommon hardness, strength, and muscularity, far surpassing in these respects any other water-bird with which I am acquainted. To all these is added a vast expansion of wing to enable the bird to sail with sufficient celerity while dipping in the water. The general proportion of the wing of our swiftest hawks and swallows to their breadth is as one to two; but in the present case, as there is not only the resistance of the air, but also that of the water to overcome, a still greater volume of wing is given, the sheerwater measuring nineteen inches in length, and upwards of forty-four in extent. In short, whoever has attentively examined this curious apparatus, and observed the possessor, with his ample wings, long bending neck, and lower mandible occasionally dipped into and ploughing the surface, and the facility with which he procures his food, cannot but consider it a mere playful amusement, when compared with the dashing immersions of the tern, the gull, or the fish-hawk, who to the superficial observer appear so superiorly accommodated. The sheerwater is most frequently seen skimming close along shore, about the first of the flood. I have observed eight or ten in company passing and repassing at high water, dipping with extended neck their open bills into the water with as much apparent ease as swallows glean up flies." So much for the speculations of M. Buffon.

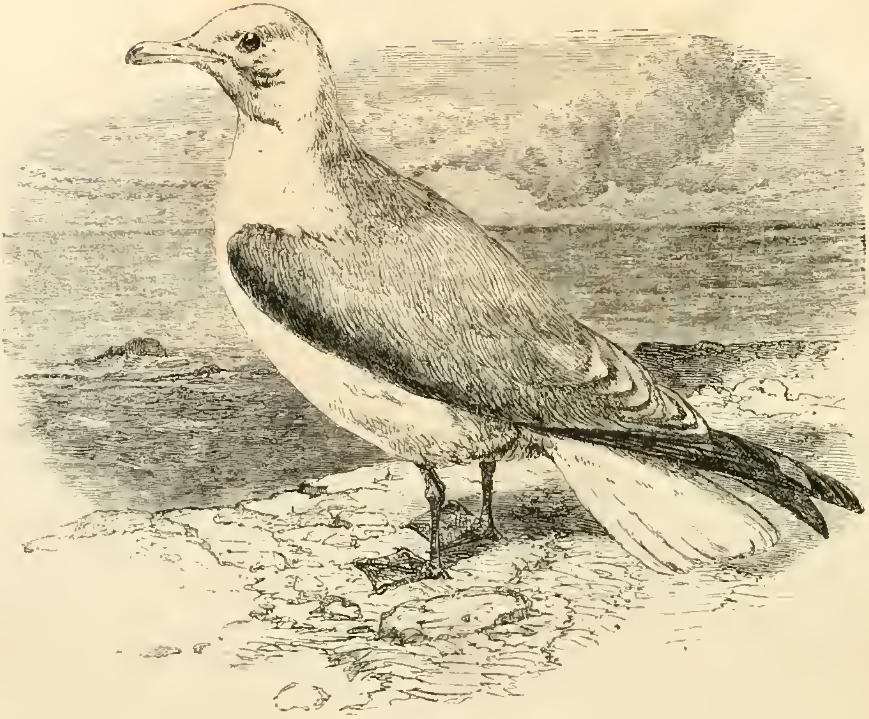
That able naturalist, Mr. Darwin, says:—"I saw this bird both on the east and west coast of South America, between latitudes 30° and 45°. It frequents either fresh or salt water. Near Maldonado, in May, on the borders of a lake which had been nearly drained, and which in consequence swarmed with small fry, I watched many of these birds flying backwards and forwards for hours together close to its surface. They kept their bills wide open, and with the lower mandible half-buried in the water. Thus skimming the surface, generally in small flocks, they ploughed it in their course; the water was quite smooth, and it afforded a curious spectacle to behold a flock, each bird leaving its narrow wake on the mirror-like surface. In their flight they often twisted about with extreme rapidity, and so dexterously managed, that they ploughed up small fish with their projecting lower mandibles, and secured them with the upper half of their scissor-like bills. This fact I repeatedly witnessed, as like swallows they continued to fly backwards and forwards close before me. Occasionally, when leaving the surface of the water, their flight was wild, irregular, and rapid; they then also uttered loud harsh cries. When these birds were seen fishing, it was obvious that the length of their primary feathers was quite necessary in order to keep their wings dry. When thus employed, their forms resembled the symbol by which many artists represent marine birds. The tail is much used in steering their irregular course.

"These birds are common far inland, along the course of the Rio Parana; and it is said they remain there during the whole year, and that they breed in the marshes. During the day they rest in flocks on the grassy plains, at some distance from the water. Being at anchor in a small vessel in one of the deep creeks between the islands in the Parana, as the evening drew to a close, one of these scissor-beaks suddenly appeared. The water was quite still, and many little fish were rising. The bird continued for a long time to skim the surface, flying in its wild and irregular manner up and down the narrow canal, now dark with the growing night and the shadows of the overhanging trees. At Monte Video, I observed that large flocks remained during the day on the mud-banks at the head of the harbour, in the same manner as those which I observed on the grassy plains near the Parana. Every evening they took flight in a straight line seaward. From these facts, I suspect that the rhynchops frequently fishes by night, at which time many of the lower animals come more abundantly to the surface than during the day. I was led by these facts to speculate on the possibility of the bill of the rhynchops, which is so pliable, being a delicate organ of touch. But Mr. Owen, who was kind enough to examine the head of one which I brought home in spirits, writes to me (August 7, 1837), that 'the result of the dissection of the rhynchops, comparatively with that of the head of the duck, is not what you anticipated. The facial or sensitive branches of the fifth pair of nerves are very small; the third division, in particular, is filamentary, and I have not been able to trace it beyond the soft integuments at the angles of the mouth. After removing with care the thin horny covering of the beak, I cannot perceive any trace of those nervous expansions which are so remarkable in the lamellirostral aquatic birds, and which in them supply the tooth-like process and soft marginal covering of the mandibles. Nevertheless, when we remember how sensitive a hair is through the nerve situated at its base, though without any in its substance, it would not be safe to deny altogether a sensitive faculty in the beak of the rhynchops.' "

The organ which thus proves so useful as a skimmer, is no less so as an oyster-knife. M. Lesson remarks:—" Though the *Bec-en-ciseaux* seems not favoured in the form of the beak, we had proof that it knew how to use it with advantage, and with the greatest address. The sandy beaches of Penco are in fact filled with mactræ, bivalve shells, which the ebbing tide leaves nearly dry in small pools; the *Bec-en-ciseaux*, well aware of this phenomenon, places itself near these mollusks, waits till their valves are opened a little, and profits immediately by the occasion to plunge the lower and trenchant blade of its bill between the valves, which immediately close. The bird then lifts the shell, beats it on the beach, and cuts the ligament of the mollusk, which it then swallows without obstacle. Many times have we been witnesses of this highly perfected instinct."

Mr. Nuttall describes the sheerwater as a bird of passage in the United States; and thinks that it probably passes the breeding season along the whole of the southern coast of the United States. "In New Jersey," he says, "it resides and breeds in its favourite haunts, along the low sand-bars and dry flats of the strand in the immediate vicinity of the ocean. Their nests have been found along the shores of Cape May about the beginning of June, and consist of a mere hollow scratched out in the sand, without the addition of any extraneous materials. The eggs are usually three in number, oval, about one inch and three-quarters to two inches by one inch and a quarter, and nearly pure white, marked almost all over with large umber-brown blotches and dashes of two shades, and other faint ones appearing beneath the surface. In some eggs these particular blotches are from half an inch to an inch in length. As the birds, like the terns and the gulls, to which they are allied, remain gregarious through the breeding season, it is possible to collect half a bushel or more of eggs from a single sand-bar, within the compass of half an acre; and though not very palatable, they are still eaten by the inhabitants of the coast."

THE GULLS.*



THE COMMON GULL.†

The Gulls are natives of every shore from north to south. Mant says truly :—

> "On nimble wing the gull
> Sweeps booming by, intent to cull,
> Voracious, from the billow's breast,
> Mark'd far away, his destined feast:
> Behold him now, deep plunging, dip
> His sunny pinion's sable tip
> In the green wave; now lightly skim
> With wheeling flight the water's brim,
> Wave in blue sky his silver sail
> Aloft, and frolic with the gale,
> Or sink again his breast to lave,
> And float upon the foaming wave:
> Oft o'er his form your eyes may roam
> Nor know him from the feathery foam,
> Nor 'mid the rolling waves, your ear
> On yelling blast, his clamour hear."

Clothed in a mass of close feathers, these birds appear larger than they in reality are, as seen on ample slowly-flapping pinions, sailing along in a circling course, and fully intent on the waves beneath.

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* Laridæ.

† Larus Canus.

THE COMMON SKUA.*

This bird is the largest and most remarkable of the Gulls. The skua inhabits the arctic regions of Europe, Asia, and America, and is very abundant in the Orkneys and Shetland Isles, breeding in communities upon Foulah, Unst, and Rona's Hill, in Mainland. It is a rare and occasional visitor in the southern part of Great Britain.

It is not merely bold, but ferocious in the breeding season. Selby says: "It will at that time attack even man, without hesitation, should he happen to approach the site of its nest; and so impetuous is its attack, that the natives of the Shetland Isles are compelled, on such occasions, to defend themselves by holding up a knife or sharp stick, on which the assailant has been frequently known to transfix and kill itself, whilst making pounces on the head of the intruder. Dogs, foxes, and other animals are instantly attacked, and so severely dealt with by the wings and beak of the strong, pugnacious skua, as to be soon driven to a hasty retreat, and no bird is permitted to approach with impunity; the eagle itself being beaten off with the utmost fury, should it happen to venture within the limits of the breeding territory."

In some places where these birds abound, they become the guardians of the young lambs, which the people consider perfectly safe in summer; and as a return for this protection, they are never molested, being held in no less esteem than the stork in Holland, or the ibis in Egypt. Other gulls are, however, exposed to the attacks of these robbers, probably because, being the most diligent pursuers of fish, they are sure to find from their exertions a never-failing supply.

The nest of the skua consists of dried weeds. There are two eggs of a dark olive-green blotched with brown. The head is of a deep brown; the neck and the under plumage brownish-gray, marbled or tinged with reddish-brown. The bill and legs are black.

The duties of incubation being over, the skua retires from the open sea, and passes a solitary life during the winter, far from land.

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* Lestris Catarractes.

THE BLACK-HEADED GULL.*

This bird abounds in various parts of the British coasts, and in some places is called the brown-headed gull. To adopt the words of the authors of the "Catalogue of Norfolk and Suffolk Birds:" "Near the centre of the county of Norfolk, at the distance of about twenty-five miles from the sea, and two from Hingham, is a large piece of water, called Scoulton Mere. In the middle of this mere there is a boggy island of seventy acres extent, covered with reeds, on which there are some birch and some willow trees. There is no river communicating between the mere and the sea. This mere has from time immemorial been a favourite breeding-place of the brown-headed gull.

"These birds begin to make their appearance at Scoulton about the middle of February; and by the end of the first week in March, the great body of them have always arrived. They spread themselves over the neighbouring country to the distance of several miles in search of food, following the plough as regularly as rooks; and, from the great quantity of worms and grubs which they devour, they render essential service to the farmer. If the spring is mild, the gulls begin to lay about the middle of April; but the month of May is the time at which the eggs are found in the greatest abundance.

"At this season a man and three boys find constant employment in collecting them, and they have sometimes gathered upwards of a thousand a day. These eggs are sold on the spot, at the rate of fourpence a score, and are regularly sent in considerable quantities to the markets at Norwich and Lynn. They are eaten cold like lapwing's eggs, and also used for culinary purposes; but they are rather of an inferior quality, and somewhat like duck's eggs in flavour. The person who sells these eggs gives fifteen pounds a year for the privilege of collecting them.

"This species of gull never lays more than three eggs the first time; but if these are taken, it will lay again. We found many of the old birds sitting in the middle of June; most of these birds had only one egg in the nest, but a few of them had two. Their nests are made of the tops of reeds and sedge, and are very flat at the surface. The eggs vary so much in size, shape, and colour, that a person not well acquainted with them would suppose some of them to belong to a different species of bird. Some are thickly covered with dusky spots, and others are of a light blue colour, without any spots at all. The young birds leave the nest as soon as hatched, and take to the water.

"When they can fly well the old ones depart with them, and disperse themselves on the sea-coast, where they are found during the autumn and winter. By the middle of July they all leave Scoulton, and are not seen there again till the following spring. We were a little surprised at seeing some of these gulls alight and sit upon some low bushy willows which grow on the island. No other than the brown-headed gull breeds at this mere; a few of them also breed in many of the marshes contiguous to the sea-coast of Norfolk."

THE GREATER BLACK-BACKED GULL.†

Mr. Hewitson states, that "this species breeds in abundance on a few of the islands of Orkney and Shetland. The birds select with care either a place surrounded by the waters of some inland lake, where no boat has ever been, or one that is difficult of access by climbing. A communication from one rock to another is formed by two parallel ropes, between which a large wooden box is suspended by holes in each side, through which the ropes pass, and the box is thus readily drawn from rock to rock; after the eggs are all carried off, sheep are conveyed across to pasture on the rich grass produced by the dung of the birds."

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* Larus Ridibundus.

† Larus Marinus.—Penn.

THE KITTIWAKE.*

The range of this bird extends over a great part of Europe, up to very high latitudes; over the northern regions of Asia, and a great portion of the North American continent.

A naturalist, in the Isle of Wight, mentions a curious fact of a gull, and probably the one now under consideration. "In the next parish to this there is a gull, either the *Larus hybernus* or *Larus rissa*, who was brought up there about twenty-seven years ago. There is a small piece of water which it used to frequent, but for many years it has nearly forsaken this, and spends its time, either sitting upon the rails of one or two cottages to which it confines its visits, or flying at liberty around the country. Every spring, when the breeding season arrives, it leaves the parish which is inland, and pairing with one of the wild birds, inhabits the white cliffs on the coast, whence it returns again alone when the breeding season is over. It is so tame at other times with those whom it knows, that it will come into their cottages and eat out of their hands, but will not allow itself to be approached thus closely by strangers."

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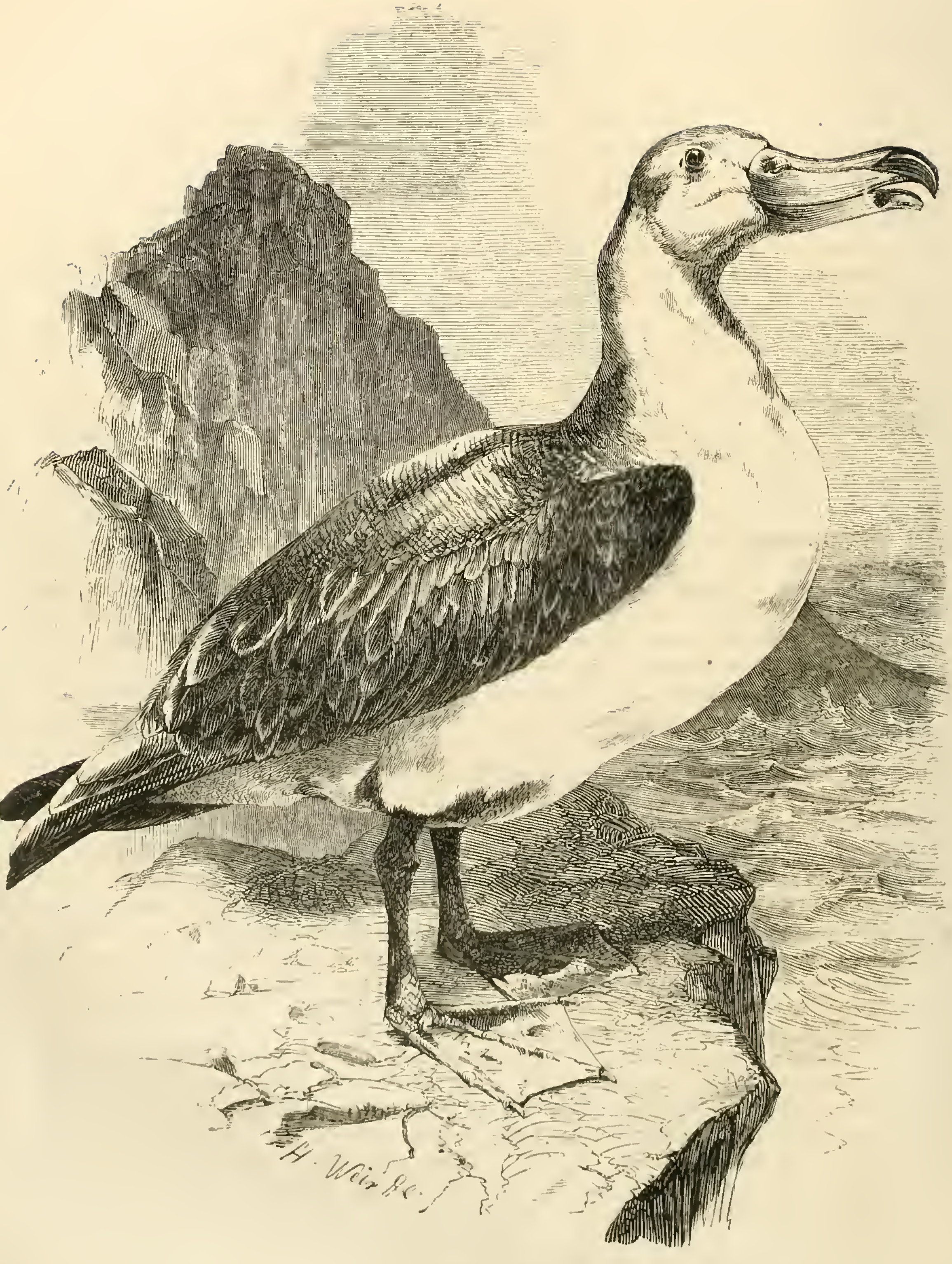
* Larus Rissa.



THE WANDERING ALBATROSS.

THE WANDERING ALBATROSS.*

"How oft, thou wanderer of the stormy deep,
Is the poor sea-boy wakened from his dream
Of home and home's delights: when half-asleep,
High in the shrouds, he hears *thy* startling scream.

Safe in the storm, unhurt by wave or wind,
Or through the fearful tempest dost thou soar,
The fleetest vessels leaving far behind,
Unchecked amidst the elemental roar.

Alas! how sure the hand that guides thy wing,
How safe the rudder, instinct, shapes thy course;
Ah! how unlike things made by hands of clay,—
Thy piercing eyes, thy pinions' matchless force."

The Wandering Albatross is the largest of all the birds that frequent the sea-coast; it measures three feet in length, while the extent of its wings is variously stated. Forster says it is about ten feet; Parkins, eleven feet seven inches; Cook, eleven feet; another authority says twelve feet—a specimen in the Leverian Museum measured thirteen feet—and Ives describes one, shot off the Cape of Good Hope, which measured seventeen feet and a half from wing to wing. "How powerful," says Dr. Arnott, "must be the wing muscles of birds which sustain themselves in the air for hours together! The great albatross, with wings extending fourteen feet or more, is seen in the stormy solitude of the Southern Ocean, accompanying ships for whole days, without even resting on the waves."

The albatross has been called by the Dutch, the Cape sheep, on account of its extreme corpulence. The beak of the bird is very powerful, but it seldom acts except on the defensive. It gets rid of the sea-gulls, who are constantly teasing it, in a singular manner, by descending rapidly through the air, and plunging the assailant into the water. The general colour is a dull white, clouded with pale brown, the wings being black; the bill is yellow; the legs flesh-colour. Its weight has been variously stated at from twelve to twenty-eight pounds.

Small marine animals and the spawn of fishes form the chief food of this bird; but it also greedily devours all kinds of fishes when they can be obtained. So voracious is it that it may be taken with a hook and line, baited merely with a piece of sheep's skin.

To the flying fish these birds are peculiarly obnoxious; driven by the dolphin out of the water, to vibrate their finny wings in a short flight through the air, they sweep upon them, and seize them with their powerful beak, the edges of which, in both mandibles, are sharp as a knife. Fish of many pounds in weight are securely grasped by this formidable instrument, and borne away with the utmost ease. Their voracity is equal to their powers, and they are capable of swallowing a very large fish at a single bolt.

A poor fellow who fell overboard from a man-of-war, off the island of St. Paul's, in the Southern Indian Ocean, was immediately perceived by two or three albatrosses; the boat was lowered with all speed, but nothing was found excepting his hat, pierced through and through with the violent stroke of their beaks, the first of which had, most probably, penetrated the skull and caused instant death.

From the great weight of the birds they have much difficulty in raising themselves into the air, which they do by striking the surface of the water with their feet, but when once on the wing their flight is rapid. It is apparently performed with great ease, as they appear to do little more than sway themselves in the air, sometimes inclining to the left and at other times to the right, gliding with great rapidity over the surface of the sea. It is only in bad weather that their flight is at any great elevation. Their voice resembles the braying of an ass.

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* Diomedea exulans.

"Now and then," says Mrs. Meredith, "a slow flapping motion serves to raise the albatross higher in the air, but the swift movement and busy flutter of other birds seems beneath his dignity. He sails almost close to you like a silent spectre. Nothing of life appears in his still, motionless form but his keen piercing eye, except that occasionally his head turns slightly, and betrays a sharp, prying expression, that somewhat shakes your belief in the lordly indifference he would fain assume; and if you fling overboard a piece of rusty pork, the disenchantment is complete, and you see that long, curiously constructed beak exercising its enormous strength in an employment so spectral a personage could scarcely be suspected of indulging."

The nests of these birds are made on the ground, with earth, of a round shape, a foot in height, and indented at top; the egg is larger than that of a goose, white-marked, with dull spots at the larger end, and is thought to be good food. While the female is sitting, the male is constantly on the wing to supply her with food; and during this period they are so tame as to suffer themselves to be shoved from the nest while the eggs are taken from them; but at other times, when caught, they will defend themselves stoutly with the bill. Their cry is said to be a harsh sonorous kind of braying.

The Wandering Albatross has been often noticed between six and seven hundred leagues from land, in the middle of the Southern Ocean; it is reasonable, therefore, to conclude that it habitually reposes like the gulls, which it otherwise much resembles, while floating on the surface of the water, though it neither dives nor can be said truly to swim.

These birds are seen in immense flocks about Behring's Straits and Kamschatka, about the end of June, frequenting chiefly the inner sea, the Kurile Islands, and the Bay of Pentschinensi, whereas scarcely a straggler is to be seen on the eastern or American shore. They seem to be attracted thither by vast shoals of fish, whose migrating movements they perseveringly follow. Captain Weddell met with great numbers of these birds amidst the icy rocks of the New South Shetlands, associating with the penguins; though in the dreary isle of Tristan d'Acunha, another traveller, Mr. Earle, describes them as the sole occupants, without any interloper, whether friend or enemy. In the higher regions, amidst the barren and cindery peaks of black rocks composing that dismal island, he found the young ones on the ground, completely uncovered, and the old ones stalking around them.

On first appearing in these seas, the albatrosses are very lean, but from finding abundance of food they soon become fat. Their voracity is so great that they will often swallow a salmon of four or five pounds weight; and then, being half-choked, and unable, in consequence, to move, the natives easily knock them down with a stick.

They do not, however, confine themselves to fish, but will prey on any other sea animal; and Cook's sailors caught them with a line and a hook. The Kamschadalers take them by fastening a cord to a large hook, baited with a whole fish, which the birds greedily seize. Their usual food, however, seems rather to be fish-spawn and small mollusks.

Notwithstanding their strength, the albatrosses never venture to attack other sea-birds, but are, on the contrary, attacked by the gulls. Cook says: "Several large gray gulls, that were pursuing a white albatross, afforded us a diverting spectacle: they overtook it, notwithstanding the length of its wings, and they tried to attack it under the belly, that part being probably defenceless: the albatross had now no means of escaping but by dipping its body into the water; its formidable bill seemed to repel them."

The style of albatrosses in selecting their mates, and also in their courtship, is described as very ludicrous. The couple approach one another with great apparent ceremony, bringing their beaks repeatedly together, swinging their heads, and contemplating each other with very deliberate attention. Sometimes this will continue for two hours together, like a courtship in a pantomime.

THE BLACK ALBATROSS.*

The Black Albatrosses, which are gregarious, build their nests close to each other, and construct them of mud, raised five or six inches, and slightly depressed at the top.

A naturalist says: "There was something extremely grotesque in the appearance of these birds, standing on their respective hillocks, motionless, like so many statues, until we approached close to them, when they set up the strangest clattering with their beaks, and, if we touched them, squirted on us a deluge of fœtid oily fluid from the stomach. . . . The *D. chlororhynchus* builds a solitary nest; retiring to some sheltered corner, and selecting in particular "the small drains that draw the water off the land into the ravines. There it runs up its nest to the height of ten or twelve inches, of a cylindrical form, with a small ditch around the base. . . . We could not help admiring the utter unconsciousness of danger displayed by them on our approach; they never showed the least disposition to move out of our way; even when kicked or pulled off their nests, they made not the smallest show of resistance, but quietly returned to their post, or stood still until we passed on."

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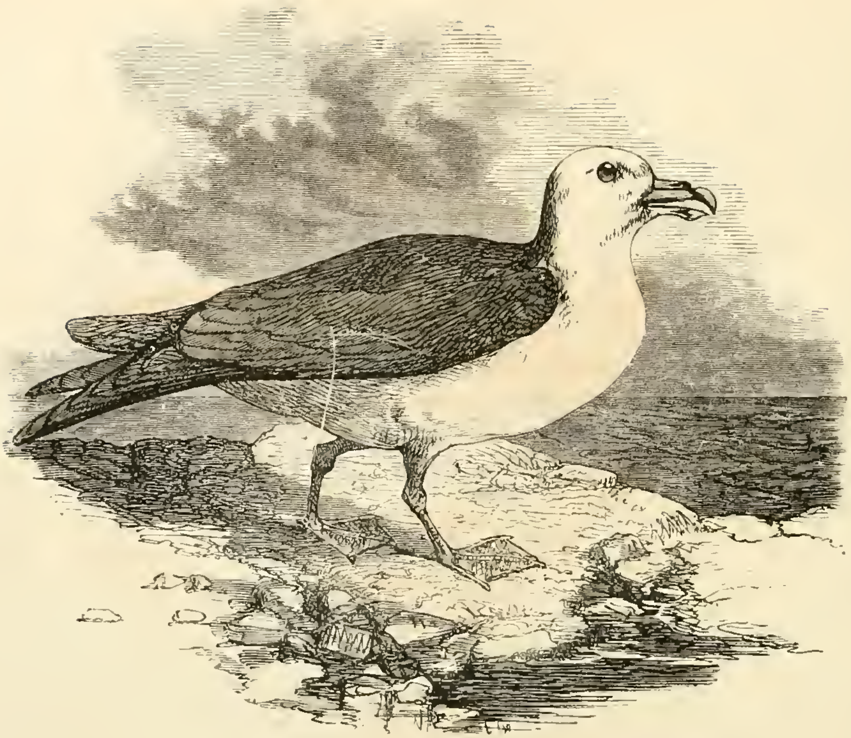
* Diomedea Fuliginosa.



THE FULMAR PETREL.*

The Fulmar Petrel is always abundant in Davis' Straits and Baffin's Bay, and it is common in the icy seas. It appears, however, to be migratory, as Captain Sabine, when detained in Jacob's Bay, saw these birds passing in a continual stream to the northward, in numbers only inferior to the flight of the "passenger pigeon" of North America.

They visit the rocky St. Kilda, one of the western Isles of Scotland, in spring, and find a temporary abode there in holes and caverns. The natives risk their lives, scaling the tremendous and overhanging cliffs in search of the young, from whose bodies they obtain down and oil.

"No bird," says Pennant, "is of such use to the islanders as this; the Fulmar supplies them with oil for their lamps, down for their beds, a delicacy for their tables, a balm for their wounds, and a medicine for their distempers."

Mr. John Macgillivray, who visited St. Kilda in June, 1840, remarks: "The nests had all been robbed about a month before by the natives, who esteem the eggs of this species above all others. Many of the nests contained each a young bird, a day or two old at furthermost, thickly covered with a long white down. The old birds, on being caught, instantly emit a quantity of clear amber-coloured oil, which imparts to the whole bird, its nest and young, and even to the rock which it frequents, a peculiar and very disagreeable odour."

The Fulmar is nearly as large as a gull, while the Stormy Petrel is about the size, and in appearance not unlike, the Swift, or largest Swallow.

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* Procellaria Glacialis.

THE STORMY PETREL.*

The Stormy Petrel, or "Mother Carey's Chicken," is seen by navigators in every part of the ocean, skimming over the surface of a heavy rolling sea. Before a storm, these birds flock under the wake of a ship, and are looked upon by the sailors as foreboding evil. "But," says that accurate naturalist, Alexander Wilson, "as well might they curse the midnight lighthouse, that, star-like, guides them on their watery way, or the buoy, that warns them of the sunken rocks below, as this harmless wanderer, whose manner informs them of the approach of the storm, and thereby enables them to prepare for it."

Barry Cornwall thus sweetly sings :—

"A thousand miles from land are we,
Tossing about on the roaring sea ;
From billow to bounding billow cast,
Like fleecy snow on the stormy blast :
The sails are scattered abroad like weeds,
The strong masts shake like quivering reeds,
The mighty cables, and iron chains,
The hull, which all earthly strength disdains—
They strain and they crack, and hearts like stone
Their natural hard proud strength disown.

"Up and down ! up and down !
From the base of the wave to the billow's crown,
And amidst the flashing and feathery foam
The Stormy Petrel finds a home—

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* Procellaria Pelagica.

A home, if such a place may be,
For her who lives on the wide, wide sea
On the craggy ice, in the frozen air.
And only seeketh her rocky lair
To warm her young, and teach them to spring
At once o'er the waves on their stormy wing!

"O'er the deep! o'er the deep!
Where the whale, and the shark, and sword-fish sleep,
Outflying the blast and the driving rain,
The Petrel telleth her tale in vain;
For the mariner curseth the warning bird,
Who bringeth him news of the storm unheard!
Ah! thus does the prophet, of good or ill,
Meet hate from the creatures he serveth still:
Yet *he* ne'er falters:—so, Petrel, spring
Once more o'er the waves on thy stormy wing!"

The whole of the family of the petrels are characterised by the strength and expansiveness of their wings, with the aid of which they traverse immeasurable tracts of the ocean in search of food, and support their flight at considerable distances from land, seldom having recourse to their power of swimming.

THE SWANS.*

THE MUTE SWAN.†

Pre-eminent for grace and elegance among the varied order of swimming-birds are the Swans. The one known in our island, and the adjacent parts of the Continent, is alike conspicuous for the beauty of its form and the elegance of its attitudes. As we observe it gliding over its congenial element, we are disposed to exclaim with Wordsworth:—

> "Behold! the mantling spirit of reserve
> Fashions his neck into a goodly curve.
> An arch thrown back between luxuriant wings
> Of whitest garniture, like fir-tree boughs,
> To which, on some unruffled morning clings
> A dusky weight of Winter's purest snows!"

This noble bird is known only to us in a state more or less completely domesticated. The nest, consisting of a large mass of reeds, rushes, and other coarse herbage, is found on the ground near the edge of the water, and an island is generally chosen rather than a bank. The female produces six or seven eggs; these are of a dull greenish-white; they are four inches in length, and rather more than two inches in breadth.

"Living on the banks of the Thames," says Mr. Jesse, "I have often been pleased with seeing the care taken of the young swans by the parent birds. Where the stream is strong, the old swan will sink herself sufficiently low to bring her back on a level with the water, when the cygnets will get upon it, and in this manner are conveyed to the other side of the river, or into stiller water. Each family of swans on the river has its own district; and if the limits of that district are encroached upon by other swans, a pursuit immediately takes place, and the intruders are driven away. Except in this instance, they appear to live in a state of the most perfect harmony. The male is very attentive to the female, assists in making the nest, and when a sudden rise of the river takes place, joins her with great assiduity in raising the nest sufficiently high to prevent the eggs being chilled by the action of the water, though sometimes its rise is so rapid that the whole nest is washed away and destroyed."

In the time of Edward IV. no one was permitted to keep swans who did not possess a freehold of at least five marks yearly value, with the exception of the king's son; and by an act of Henry VII., persons convicted of taking their eggs were liable to a year's imprisonment, and a fine at the will of the sovereign. For ages, the Corporation of the City of London were accustomed annually to visit the swans on the Thames—a practice commonly called "swan-*hop*ping." This name is a corruption of the phraseology in use of "swan-*up*ping," denoting the duties of the official visitors, which was to "take up" the swans that they might be marked. In proof of their estimation in former times, a rare and valuable quarto tract, printed in 1570, mentions the "*upping* daies"—declares what persons shall "*up* no swannes"—and speaks of a court no longer generally known—"The King's Majesties Justices of Sessions of Swans."

The swan-markers proceed to the different parts of the river frequented by the swans for breeding, and other places where the birds are kept. They pay half-a-crown for each young bird to the fishermen who have made nests for the old birds, and two shillings per week to any person who, during the winter, has taken care of the swans by sheltering them in ponds, or otherwise protecting them from the severity of the weather.

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* Cygnus.

† Cygnus Olor.

Where, as it sometimes happens, the male bird of one owner mates with the female of another, the brood are divided between the owners of the parent birds, the odd cygnet, except in Buckinghamshire, being allotted to the owner of the male.

The young or brown birds receiving the marks of their respective owners, and pinioned, are put into the river, as are also the white or old swans after the completing of the pinioning of such of them as, on account of their weakness, had, in their first year, been deprived of one joint only of the wing. If any white swans are found by the sovereign's marker in an open common, river, or creek, he seizes them, and the crown mark is put upon them. But swans kept in private waters need not be marked. A subject who has white swans not marked, and has private waters, may retake them upon fresh pursuit, if they escape therefrom into an open and common river; though it is otherwise if they have gained their natural liberty, and are swimming in open rivers without such pursuit.

The sign of one of our old city inns, "The Swan with Two Necks," arose out of a practice of those times. According to the swan laws, every one belonging to the king was marked with two *nicks* or notches; and the original sign was the royal bird so marked, that is to say, with two *nicks*. In process of time, by some mistake, the two nicks were called two necks; and the error has been perpetuated to our own day.

Mr. Grouvelle states, that when a severe frost threatens to usurp their domain, the swans congregate and dash the water with their wings fully extended, making a noise which is heard very far, and which, whether in the night or the day, is louder in proportion as the frost becomes more intense. In former times the swan was served up at every great feast; and the late Bishop of Norwich, then President of the Linnæan Society, favoured Mr. Yarrell with the following particulars of a practice in that city, in reference to the feeding the young swans of the year for the table:—The town-clerk sends a note from the town-hall to the public swan-herd, the corporation, and others, who have swans and swan-rights. On the second Monday of August, when collected in a small stream or pond, the number annually varying from fifty to seventy, and many of them belonging to private individuals, they begin to feed immediately, being provided with as much barley as they can eat, and are usually ready for killing early in November. A printed copy of the following lines is usually sent with each bird:—

TO ROAST A SWAN.

Take three pounds of beef, beat fine in a mortar,
Put it into the swan—that is, when you've caught her;
Some pepper, salt, mace, some nutmeg, an onion,
Will heighten the flavour in gourmand's opinion.
Then tie it up tight with a small piece of tape,
That the gravy and other things may not escape.
A meal paste, rather stiff, should be laid on the breast,
And some whited brown paper should cover the rest.
Fifteen minutes, at least, ere the swan you take down,
Pull the paste off the bird, that the breast may get brown.

THE GRAVY.

To a gravy of beef, good and strong I opine,
You'll be right if you add half a pint of port wine,
Pour this through the swan, yes, quite through the belly,
Then serve the whole up with some hot currant jelly.
N.B.—The swan must not be skinned.

The voice of the swan is low, soft, and murmuring, and when heard from multitudes congregated together has a very pleasing effect. To it Shakspeare repeatedly alludes. Thus, while Bassanio deliberates on the caskets, Portia says:

"Hark! canst thou hear me? I will play the swan,
And die in music—Willow, willow, willow."

THE BLACK-NECKED SWAN.*

A very beautiful species of the swan is found in Chili, the Falkland Islands, the River Plate, and other parts of South America. It is distinguished by a black neck, which finely contrasts with the snowy whiteness of the rest of its plumage. The bill is red, and the legs flesh-colour. The engraving exhibits two of them lately bequeathed by the Earl of Derby, from his celebrated collection at Knowsley, to the Zoological Society of London, of which his lordship was the president. The society now possesses four examples of the black-necked swan. One other pair only exist in Europe, and are in her Majesty's collection at Buckingham Palace.

The comparison, "like to a black swan," arose from its being supposed there was no such bird; but the *Anas Plutonia* of Shaw has now become common in our menageries, where it breeds freely. It is black, with the exception of the primary and a few of the secondary quills, which are white. The bill is bright-red above, and sometimes has a slight tubercle at the base, which the female wants. The anterior part of the upper mandible is crossed by a whitish band.

THE HOOPER.†

The Hooper, or Whistling Swan, is a winter visitor to the British islands, even to the southern parts, arriving in flocks, sometimes as late as Christmas, and they are generally more numerous as the weather becomes more severe. The Rev. Mr. Low says:—"The wild swan is found in all seasons in Orkney; a few pairs build in the holms of the loch of Stenness. These, however, are nothing to the flocks that visit us in October from the more northern climates—their summer retreats. Part of these continue with us all the winter, and the rest go to Caithness and the other northern shores of Scotland; in Apri they go again to the northward, except the few which remain here for the summer. Like the wild geese, these birds fly in the fashion of a wedge, making a few melodious clangs, which has, perhaps, furnished one occasion to give a musical voice to this bird." These birds visit Holland, France, Provence, and Italy; and it is said they sometimes go as far south as Egypt and Barbary.

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* Cygnus Nigricollis.

† Cygnus Ferus.

Several years ago some hoopers were in the possession of the late Earl of Egremont at Petworth, where they are said to have produced their young. The note of one of them, a very old and large male, is described as resembling the sound of the word "hoop;" he repeated it loudly ten or twelve times in succession. Mr. Yarrell states that a pair of hoopers bred on one of the islands in the gardens of the Zoological Society, in the summer of 1839, and that a curious circumstance occurred at that time in reference to the brood. The cygnets, when only a few days old, were sunning themselves on the margin of one of the islands, close to the deep water. The parent birds were swimming near. A carrion crow made a descent, and struck at one of the cygnets; the old male hooper came to the rescue in an instant, seized the crow with his beak, pulled him into the water, and, in spite of all his buffetings and resistance, held him there till he was dead.

BEWICK'S SWAN.*

Mr. John Blackwall, in his researches in zoology, after referring to a specimen of Bewick's swan in the Manchester Museum, says: "About half-past eight, on the morning of the 10th of December, 1829, a flock of twenty-nine swans, mistaken by many persons who saw them for wild geese, was observed flying over the township of Crumpsall, at an elevation not exceeding fifty yards above the surface of the earth. They flew in a line, taking a northerly direction, and their loud calls, for they were very clamorous when on the wing, might be heard to a considerable distance. I afterwards learned that they alighted on an extensive reservoir near Middleton, belonging to Messrs. Burton and Sons, calico printers, where they were shot at, and an individual had one of its wings so severely injured that it was disabled from accompanying its companions in their retreat. A short time since, I had an opportunity of seeing this bird, which resembled the rest of the flock with which it had been associated, and found, as I had anticipated, that it was precisely similar to the small swan preserved in the Museum at Manchester, which, I should state, was purchased in the fish-market in that town about five or six years ago.

"Twenty-nine of these birds congregated together, without a single whistling swan among them, is a fact so decisive of the distinctness of the species, especially when taken in connexion with those external characters and internal structure in which it differs from the hooper, that I should no longer have deferred to describe it as a new bird to ornithologists, had I not been anticipated by Mr. Yarrell.

"Of the habits and manners of this species, little could be ascertained from a brief inspection of a wounded individual; I may remark, however, that when on the water, it had somewhat the air and appearance of a goose, being almost wholly devoid of that grace and majesty by which the mute swan is so advantageously distinguished. It appeared to be a shy and timid bird, and could only be approached near by stratagem, when it intimated its apprehension by uttering its call. It carefully avoided the society of a mute swan which was on the same piece of water.

"On the 28th of February, 1830, at half-past ten in the morning, seventy-three swans, of the new species, were observed flying over Crumpsall in a south-easterly direction, at a considerable elevation. They flew abreast, forming an extensive line, like those seen on the 10th of December, 1829; like them, too, they were mistaken for wild geese by most persons who saw them with whom I had an opportunity of conversing on the subject; but their superior dimensions, the whiteness of their plumage, their black feet, easily distinguished as they passed overhead, and their reiterated calls, which first directed my attention to them, were so strikingly characteristic, that skilful ornithologists could not be deceived with regard to the genus to which they belonged. That these birds were not hoopers may be safely inferred from their great inferiority in point of size.

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*Cygnus Bewickii—Yarrell.

"I was informed, that when the wild swans were shot at, near Middleton, on the 10th of December, 1829, one of them was so reluctant to abandon the bird which was wounded on that occasion, that it continued to fly about the spot for several hours after the rest of the flock had departed, and that, during the whole of this period, its mournful cry was heard almost incessantly. In consequence of the protracted disturbance caused by the persevering efforts of Messrs. Burton's workmen to secure its unfortunate companion, it was at last, however, compelled to withdraw, and was not seen again till the 23rd of March, when a swan, supposed to be the same individual, made its appearance in the neighbourhood, flew several times round the reservoir in lofty circles, and ultimately descended to the wounded bird, with which, after a cordial greeting, it immediately paired. The newly-arrived swan, which proved to be a male bird, soon became accustomed to the presence of strangers; and when I saw it on the 4th of April, was even more familiar than its captive mate. As these birds were strongly attached to each other, and seemed to be perfectly reconciled to their situation, which in many respects was an exceedingly favourable one, there was every reason to believe that a brood would be obtained from them. This expectation, however, was not destined to be realised. On the 13th of April, the male swan, alarmed by some strange dogs which found their way to the reservoir, took flight and did not return; and on the 5th of September, in the same year, the female bird, whose injured wing had recovered its original vigour, quitted the scene of its misfortunes, and was seen no more."

THE SUMMER DUCK.*

Almost all the coloured plumage of this bird shows a play of colours with metallic lustre. It has a pendent occipital crest of green and auricula purple, marked with two narrow white lines, one of them terminating behind the eye, the other extending over the eye to the bill. The female has a shorter crest, and the plumage is less vivid.

"In Pennsylvania," says Wilson, "the female usually begins to lay late in April, or early in May. Instances have been known where the nest was constructed of a few sticks laid in a fork of the branches; usually, however, the inside of a hollow tree is selected for this purpose. On the 18th of May, I visited a tree containing the nest of a summer duck, on the banks of Tuckahoe river, New Jersey. It was an old, grotesque, white oak, whose top had been torn off by a storm. It stood on the declivity of the bank, about twenty yards from the water. In this hollow and broken top, and about six feet down on the soft decayed wood, lay thirteen eggs, snugly covered with down, doubtless taken from the breast of the bird. These eggs were of an exact oval shape, less than those of a hen, the surface exceedingly fine grained and of the highest polish, and slightly yellowish, greatly resembling old polished ivory." . . . .

"This tree had been occupied probably by the same pair for four successive years in breeding-time; the person who gave me the information, and whose house was within twenty or thirty yards of the tree, said that he had seen the female, the spring preceding, carry down thirteen young, one by one, in less than ten minutes. She caught them in her bill by the wing or back of the neck, and landed them safely at the foot of the tree, whence she afterwards led them to the water. Under this same tree, at the time I visited it, a large sloop lay on the stocks, nearly finished; the deck was not more than twelve feet distant from the nest; yet, notwithstanding the presence and noise of the workmen, the ducks would not abandon their old breeding-place, but continued to pass out and in as if no person had been near. The male usually perched on an adjoining limb, and kept watch while the female was laying, and often also while she was sitting. A tame goose had chosen a hollow space at the root of the same tree to lay and hatch her young in. The summer duck seldom flies in flocks of more than three or four individuals together, but most commonly in pairs or singly." The food of this elegant bird consists of acorns, grain, the seeds of plants, and insects.

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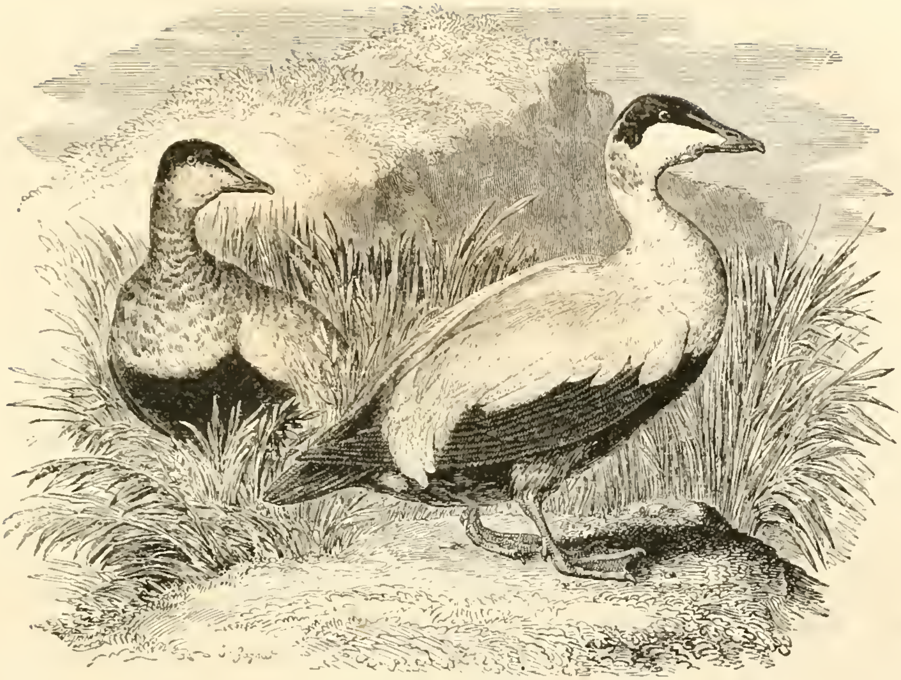
* Dendronessa Sponsa.



THE EIDER DUCK.*

The Eider Duck is a native of the Arctic Seas, and is found in great abundance along the shores of Iceland, Greenland, Lapland, Spitzbergen, and those of Hudson's and Baffin's Bays. It is chased by the Greenlanders for the sake of its flesh and its skin; the former, though rank, is valued as food; the latter yields clothing of singular warmth and comfort.

" The down of this bird," says Shaw, " is of such value, that, when in purity, it is sold in Lapland for two rix-dollars a pound; it is extremely soft and warm, and so light and expansive that a couple of handfuls squeezed together are sufficient to fill a quilt five feet square."

The males and females of the eider differ greatly in plumage.

The Hon. A. Dillon, who spent a winter in Iceland and Lapland, obtained some interesting particulars as to these birds, which we may now render available. So much do they feel their security in Vidoe, that five of them had chosen as their location the ground under a narrow bench that ran along the windows of the house in which he lived, and, without moving away, they would peck at the hand that disturbed them. The rising ground was particularly favourable for the birds to build on, being covered with hollows and inequalities that served to protect them from the weather, and only required the addition of down to convert them into nests.

The drakes are easily known by their white and black plumage; but the dark hue of the females makes it difficult to distinguish them from the holes in which they sit. Owing to their lying close, they have been often trodden upon, without indicating their presence till the mischief was done. The drakes, though by no means wild, will not allow themselves to be handled so freely as the ducks, and mostly keep together on the top of the hill.

As soon as a nest is completed, it is usual to remove the greater part of the down, while the bird is away feeding; and this operation is repeated a second, and occasionally a third time. On her return, the bird makes up the deficiency thus created by stripping her own breast; and when her stock is exhausted, she calls on her mate to add his portion, which will bear no comparison with the sacrifice she has made.

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* Somateria Mollimissa.

The same sort of spoliation is practised with regard to the eggs, care being taken that three or four are left; for should the bird on her return find the nest empty, she will desert it, and not breed again the same season. About six, considerably larger than those of tame ducks, and of a light-green colour, are found in each nest. The average quantity of down obtained from these nests is half a pound, so mixed, however, with grass and foreign matter, that forty pounds in that state are reduced to fifteen after it has been thoroughly cleansed. Vidoe and Engoe produce, Mr. Dillon supposes, about three hundred pounds weight yearly, which would make the number of ducks that come to those two places not far short of ten thousand annually.

THE SURF SCOTER.[*]

Mr. Wilson describes the Surf Scoter as confined to the shores and bays of the sea, particularly where the waves roll over the sandy beach. Their food consists principally of small bivalve shell-fish, spout-fish, and others that lie in the sand near its surface. For these they dive almost constantly, both in the sandy bays and amidst the tumbling surf. They seldom or never visit the salt marshes.

Mr. Audubon's account furnishes many interesting particulars, and a portion of it is as follows :—"While proceeding towards the sterile country of Labrador, in 1833, on board the Ripley, I found the waters of the Gulf of St. Lawrence alive with ducks of different species. The nearer we approached the coast, the more numerous did they become ; and of the many kinds that presented themselves to our anxious gaze, the surf duck was certainly not the least numerous. It is true that in the noble bays of our own coast, in the Sound between New York and the Hook, on the broader waters of the Chesapeake, and beyond them to the mouths of the Mississippi, I had seen thousands of surf ducks; but the numbers that passed the shores of Labrador, bound for the far north, exceeded all my previous conceptions. For more than a week after we had anchored in the lovely harbour of Little Macatina I had been anxiously searching for the nest of this species, but in vain. At length, I found that a few pairs had remained in the neighbourhood, and one morning, while in the company of Captain Emery, searching for the nests of the red-breasted merganser, over a vast oozy and treacherous fresh-water marsh, I suddenly started a female surf duck from her treasure. We were then about five miles distant from our harbour, from which our party had come in two boats, and fully five and a half miles from the waters of the Gulf of St. Lawrence. The marsh was about three miles in length. The nest was snugly placed amid the tall leaves of a bunch of grass, and raised fully four inches above its roots. It was entirely composed of withered and rotten weeds, the former being circularly arranged over the latter, producing a well-rounded cavity, six inches in diameter, by two and a half in depth. The borders of this inner cup were lined with the down of the bird, in the same manner as the eider duck's nest, and in it lay five eggs, the smallest number I have ever found in any duck's nest. They were two inches and two and a-half eighths in length, by one inch and five-eighths in their greatest breadth ; more equally rounded at both ends than usual ; the shell perfectly smooth, and of a uniform pale yellowish or cream colour. I took them on board along with the female, which was shot as she rose from the nest. We saw no male bird near the spot ; but, in the course of the same day, met with several males by themselves, about four miles distant from the marsh, as we were returning to the harbour. This induced me to believe, that, like the eider and other ducks that breed in Labrador, the males abandon the females as soon as incubation commences. I regret that, notwithstanding all my further exertions, I did not succeed in discovering more nests or young birds. The female, which was killed as she flew off from the nest, uttered a rough, uncouth, guttural cry, somewhat resembling that of the goosander on similar occasions; and I have never heard any other sound from either sex. The surf duck is a powerful swimmer and an expert diver; it is frequently observed fishing at the depth of several fathoms ; and it floats buoyantly among the surf or the raging billows, where it seems as unconcerned as if it were on the most tranquil waters. I have never seen this species on any fresh-water lake or river in any part of the interior, and, therefore, consider it as truly a marine duck."

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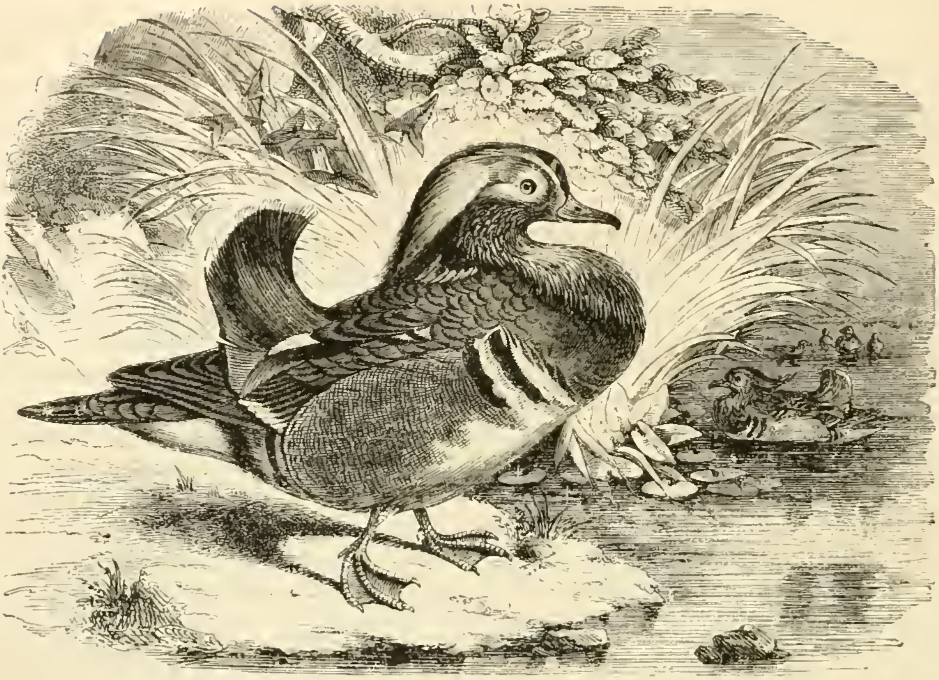
[*] Oidemia Perspicillata,—Flem.



THE CHINESE TEAL.*

The Mandarin Duck, or Chinese Teal, remarkable from the brilliancy of its plumage, never mates a second time. Of this Mr. Davis gives the following proof:—"From a pair of these birds, in Mr. Beale's aviary at Macao, the drake happened one night to be stolen. The duck was perfectly inconsolable, like Calypso after the departure of Ulysses. She retired into a corner, neglected her food and person, refused all society, and rejected with disdain the proffer of a second love. In a few days, the purloined duck was recovered and brought back. The mutual demonstrations of joy were excessive; and what is more singular, the true husband, as if informed by his partner of what had happened in his absence, pounced upon the would-be lover, tore out his eyes, and injured him so much that he soon after died of his wounds."

THE BUFFEL-HEADED DUCK.†

Audubon says, "that during autumn and winter this bird is to be seen in almost every part of the Union, frequenting the sea-shore, rivers, and lakes. It feeds on shell-fish, shrimps, and marine plants, particularly the species of laver called *Ulva lactuca,* and the bird being generally very fat, one of its common names is Butter-box; it is also called Spirit Duck, and Conjurer, from the facility with which it escapes by diving suddenly at the flash of a gun, or the twang of a bowstring. The buffel-headed duck is a very hardy bird, for it remains during extremely cold weather on the Ohio, when it is thickly covered with floating ice, among which it is seen diving almost constantly in search of food. When the river is frozen over they seek the head-waters of the rapid streams, in the turbulent eddies of which they find abundance of prey. Possessed of a feeling of security arising from the rapidity with which they can dive, they often allow you to go quite near them, though they will then watch every motion, and at the snap of your gun, or on its being discharged, disappear with the swiftness of thought, and, perhaps, as quickly rise again within a few yards, as if to ascertain the cause of their alarm. When these birds return to us from the north, the number of the young so much exceed that of the old, that to find males in full plumage is much more uncommon than toward the time of their departure, when I have thought the males as numerous as the females. Although at times they are very fat, their flesh is fishy and disagreeable; many of them, however, are offered for sale in our markets.

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* Anas Galericulata.

† Clangula Albeola.

The note is a mere croak, much resembling that of the golden eye, but not so loud."

THE SCAUP DUCK.*

Colonel Montagu, who kept both sexes of this species alive in confinement many years, observed, that they associated together apart from all other ducks, made the same grunting noise, and both had the same singular toss of the head, attended with an opening of the bill, which, in the spring, is continued for a considerable time while swimming and sporting on the water. This singular gesture would be sufficient to identify the species were all other distinctions wanting. In the case of one female which died, Montagu mentions that the cause of death appeared to be in the lungs, and in the membrane that separates them from the other viscera; this last was much thickened, and all the cavity within was covered with *mucor*, or blue mould.

"It is a most curious circumstance," this writer adds, "to find this vegetable production growing within a living animal, and shows that where air is pervious, mould will be found to obtain, if it meets with sufficient moisture, and a place congenial to vegetation. Now the fact is, that the part on which this vegetable was growing was decayed, and had no longer in itself a living principle; the dead part, therefore, became the proper pabulum of the invisible seeds of the *mucor*, transmitted by the air in respiration; and thus nature carries on all her works immutably under every possible variation of circumstance. It would indeed be impossible for such to vegetate on a living body, being incompatible with vitality; and we may be assured that decay must take place before this minute vegetable can make a lodgment to aid in the great change of decomposition. Even with inanimate bodies, the appearance of mould, or any species of fungi, is a sure presage of partial decay and decomposition."

THE HARLEQUIN DUCK.†

This species is well known to American ornithologists. Mr. Audubon says: "On the 31st of May, 1833, I found them breeding on White Head Island, and other much smaller places of a similar nature, in the same part of the Bay of Fundy. There they place their nests under the bushes, or amid the grass, at the distance of twenty or thirty yards from the water. Further north, in Newfoundland and Labrador, for example, they remove from the sea, and betake themselves to small lakes a mile or so in the interior, on the margins of which they form their nests beneath the bushes next to the water. The nest is composed of dry plants of various kinds, arranged in a circular manner to the height of two or three inches, and lined with finer grasses. The eggs are five or six, rarely more, measure two inches and one-sixteenth by one inch and nine-sixteenths, and are of a plain greenish-yellow colour. After the eggs are laid, the female plucks the down from the lower parts of her body, and places it beneath and around them, in the same manner as the eider duck and other species of this tribe. The male leaves her to perform the arduous, but no doubt to her pleasant, task of hatching and rearing the brood; and joining his idle companions, returns to the sea-shore, where he moults in July and August."

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* Anas Marila.

† Anas Histrionica.

THE AMERICAN WIGEON.

Mr. Audubon says: "This duck is abundant during winter in New Orleans, where it is much esteemed on account of the juiciness of its flesh, and is best known by the name of *zinzin*. In the western country, and in most parts of the eastern and middle states, it is called the *bald pate*. While advancing along the shores of the Bay of Mexico, in April, 1837, I and my party observed this species in considerable numbers; and during the whole of our stay in the Texas, we daily saw, and very frequently procured wigeons. There they were found in ponds of brackish water, as well as in the fresh-water streams. Before we left that country they were all paired; and I was informed by the Honourable M. Fisher, secretary to the Texian Navy, that a good number of them breed in the maritime districts along with several other ducks, and that he annually received many of the young birds. Their manners at this time fully proved the correctness of the statements of all those who spoke to me on this subject. Indeed, my opinion is, that some of these birds also propagate in certain portions of the most southern districts of the Floridas, and in the island of Cuba, as I have seen wigeons in the peninsula in single pair in the beginning of May."

Wilson says: "This species is very common in winter along the whole coast, from Florida to Rhode Island, but most abundant in Carolina, where it frequents the rice plantations. In Martinico, great flocks take short flights from one rice-field to another, during the rainy season, and are much complained of by the planters. The wigeon is the constant attendant of the celebrated Canvas-back Duck, so abundant in various parts of the Chesapeake Bay. They are said to be in great plenty at St. Domingo and Cayenne, where they are called 'vingeon,' or 'gingeon;' are said sometimes to perch on trees, feed in company, and have a sentinel on the watch, like some other birds. They feed little during the day, but in the evenings come out from their hiding-places, and are then easily traced by their particular whistle, or *whew, whew*. This soft note or whistle is frequently imitated with success, to entice them within gun-shot. They are not known to breed in any part of the United States; are common in the winter months along the bays of Egg Harbour and Cape May, and also those of the Delaware. They leave these places in April, and appear upon the coasts of Hudson's Bay in May, as soon as the thaws come on, chiefly in pairs; lay there only from six to eight eggs, and feed on flies and worms in the swamps; depart in flocks in autumn. These birds are frequently brought to the market of Baltimore, and generally bring a good price, their flesh being excellent. They are of a lively, frolicsome disposition, and with proper attention might easily be domesticated."

THE COMMON SHELLDRAKE.*

Colonel Hawker, in reference to their habits, says: "The young shelldrakes, directly after being hatched in the rabbit-burrows, are taken by the parent birds to the sea, where they may be seen in what the boatmen call troops, of from thirty to forty; but as the female seldom hatches more than fourteen eggs, it is clear that each flock is formed by two or three broods. On their being approached, the old ones fly away, and leave the young to shift for themselves by diving. They may be easily shot when they come up, but you can seldom kill more than one or two at a time, as they always disperse before you can get very near them.

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* Anas Tadomas.

" These birds show but tame sport with a gun, and are good for nothing when killed. But, in winter nights, they often give you a fine shot on the mud, though they are so white that you can seldom perceive them, even afloat, without a good moon. Be prepared to fire directly you rise; as they being quick-sighted birds, will give you but little time to present your gun. We had a great many burrow ducks on our coast, Hampshire and Dorsetshire, during the last hard winter. They were the wildest of birds till half-starved by the freezing of the shell-fish, and then they became the tamest of all wild fowl.

" You may keep young burrow ducks for five or six weeks, provided you give them crumbs of bread, and only a little water three times a day. But if you let them get into the water or even drink too much before they are full grown, and fit to be turned out on your pond, you are almost sure to kill them. This appears quite a paradox with birds that, in their wild state, are always in the water; but such is the case."

THE WILD DUCK.*

The Wild Duck, or Mallard, is nearly two feet in length, two feet ten inches in extent of wings, and weighs from two and a-half to three pounds. The bill is of a greenish-yellow colour; the head and upper part of the neck are of a glossy changeable green, terminated in the middle of the neck by a white collar, with which it is nearly encircled. The scapulars are white, barred, or rather undulated, with minute lines of brown; the back is brown, and the rump black, glossed with green. On the wing-coverts, two transverse white streaks, edged with black, enclose a broad stripe of a lucid violet-green colour. The lower part of the neck and breast is of a chestnut colour; the belly is pale gray, crossed with numerous transverse dusky lines. The tail consists of twenty feathers, and is pointed in shape. The legs are orange. The female bird is very plain.

Wild ducks inhabit Europe, Asia, and America. In summer they frequent the lakes and marshes of the north, and in autumn they migrate southward in large bodies, spreading themselves over the lakes and marshes of more temperate latitudes. Considerable numbers of them return northward in spring; but many straggling pairs, as well as former colonists, stay in England to rear their young, which become natives, and remain throughout the year in the marshy tracts of the British isles.

The change in the mallard is thus characteristically described by Mr. Waterton:—"At the close of the breeding-season the drake undergoes a very remarkable change of plumage; on viewing it, all speculation on the part of the ornithologist is utterly confounded; for there is not the smallest clue afforded him by which he may be enabled to trace the cause of this strange phenomenon. To Him alone, who has ordered the ostrich to remain on the earth, and allowed the bat to range through the ethereal vault of heaven, is known why the drake, for a very short period of the year, should be so completely clothed in the raiment of the female, that it requires a keen and penetrating eye to distinguish the one from the other. About the 4th of May, the breast and back of the drake exhibit the first appearance of a change of colour. In a few days after this, the curled feathers above the tail drop out, and gray feathers begin to appear amongst the lovely green plumage which surrounds the eyes. Every succeeding day now brings marks of rapid change. By the 23rd of June, scarcely one single green feather is to be seen on the head and neck of the bird. By the 6th of July every feather of the former brilliant plumage has disappeared, and the male has received a garb like that of the female, though of a somewhat darker tint. In the early part of August, this new plumage begins to drop off gradually, and by the 10th of October the drake will appear again in all his rich magnificence of dress, than which scarcely anything throughout the whole wide field of nature can be seen more lovely or better arranged to charm the eye of man. This description of the change of plumage in the mallard has been penned down with great care. I enclosed two male birds in a coop, from the middle of May to the middle of October, and saw them every-day during the whole of their captivity. Perhaps the moulting in other individuals may vary a trifle with regard to time. Thus we may say that once every year, for a very short period, the drake goes, as it were, into an eclipse, so that from the early part of the month of July, to about the first week in August, neither in the poultry yards of civilised man, nor through the vast expanse of Nature's wildest range, can there be found a drake in that plumage which, at all other seasons of the year, is so remarkably splendid and diversified."

Naturally very shy birds, wild ducks fly at a considerable height in the air, in the form of a wedge or triangle. Before they alight on any spot, they describe several turns round it, as if to reconnoitre it, and then descend with great precaution. They generally keep at a distance from the shore when they swim; and when the greater part of them sleep upon the water, with their heads under their wings, some of the party are always awake to watch over the common safety, and to apprise the sleepers of approaching danger. The extreme wariness of these birds renders much patience and ingenuity necessary on the part of the fowler. They rise vertically from the water with loud cries; and in the night-time their flight over head may be known by the hissing noise they make. They are more active by night than by day; indeed those that have been seen by day have generally been roused by a sportsman, or by some bird of prey.

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* Anas Boschas.

Singular modes of capturing wild ducks are practised in America. In some ponds frequented by these birds, five or six wooden figures, cut and painted to represent ducks, and sunk by pieces of lead nailed to their bottoms, so as to float at the usual depth on the surface, are anchored in a favourable position for being raked from a concealment of brushwood, &c., on shore. The appearance of these decoys usually attracts passing flocks, which alight, and are soon shot down. Sometimes eight or ten of these painted ducks are fixed in a frame, in various swimming postures, and secured to the bow of the gunner's skiff, projecting before it in such a manner that the weight of the frame sinks the figures to their proper depth; the skiff is then dressed with sedge, or coarse grass, in an artful manner, as low as the water's edge; and under cover of this, which appears like a covey of ducks swimming by a small island, the gunner floats down, sometimes to the very skirts of a congregated multitude, and speedily pours in a destructive and repeated fire of shot among them. In winter, when detached pieces of ice are occasionally floating in the river, some of the fowlers on the Delaware paint their whole skiff, or canoe, white, and laying themselves flat at the bottom, with their hand over the side silently managing a small paddle, direct it imperceptibly into or near a flock, before the ducks have distinguished it from a floating mass of ice, and generally do great execution amongst them. A whole flock has sometimes been thus surprised asleep, with their heads under their wings. On land, another stratagem is sometimes practised with great success:—a large tight hogshead is sunk in the flat marsh or mud, near the place where ducks are accustomed to feed at low water, and where, otherwise, there is no shelter. The edges and top are artfully concealed with tufts of long coarse grass and reeds, or sedge. From within this the fowler, unseen and unsuspected, watches the collecting party, and, when a sufficient number offers, sweeps them down with great effect.

Among the methods resorted to in different countries for the capture of wild ducks, another is so remarkable as to require particular notice. On the river Ganges, in India, at Ceylon, and in China, a man wades into the water up to his chin, and, having his head covered with an empty calabash, approaches the place where the ducks are, and they not regarding an object so commonly seen upon the water, suffer the man to mingle freely among the flock, when he has nothing to do but to pull them under water by the legs, one by one, until he is satisfied, and then returns to the shore as unsuspected by the remainder as when he first came among them. For this purpose the earthern vessels used by the Gentoos, called kutcharee pots, which are thrown away as defiled after having been once used for cooking rice, are often employed instead of calabashes; and some authors state that hollow wooden vessels, with holes to see through, are sometimes used for the same purpose.

In years that are past there used to be much sport with ducks in the fens of Lincolnshire. In the lakes, to which they resorted, their favourite haunts were observed. In the most sequestered part of a haunt a pipe or ditch was then cut about four yards across the entrance, and decreasing gradually in width from the entrance to the further end, which was not more than two feet wide. The ditch was of a circular form, but did not bend much for the first ten yards.

The banks of the lake on each side of the ditch were kept clear from reeds and close herbage, in order that the ducks might get on them to sit and dress themselves. Along the ditch poles were driven into the ground, close to its edge, on each side, and the tops were bent over across the ditch, and tied together.

The poles thus bent formed at the entrance of the ditch an arch, the top of which was ten feet distant from the surface of the water. The arch was made to decrease in height as the ditch decreased in width, so that the remote end was not more than eighteen inches in height. The poles were placed about six feet from each other, and connected by poles laid lengthwise across the arch and tied together. Over the whole was thrown a net, which was made fast to a reed-fence at the entrance, and nine or ten yards up the ditch, and afterwards strongly pegged to the ground.

At the end of the ditch furthest from the entrance was fixed what was called a "tunnel-net," about four yards in length, of a round form, and kept open by a number of hoops, about eighteen inches in diameter, placed at a small distance from each other, to keep it distended. Supposing the circular bend of the ditch to be to the right when one stands with his back to the lake, then on the left hand side a number of reed-fences were constructed, called "shootings," for the purpose of screening the decoy-man from observation, and in such a manner that the fowl in the decoy might not be alarmed while he was driving those that were in the pipe. These shootings, which were ten in number, were about four yards in length and about six feet high. From the end of the last shooting a person could not see the lake, owing to the bend of the ditch, and there was then no further occasion for shelter. Were it not for these shootings, the fowl that remained about the mouth of the ditch would have been alarmed if the person driving the fowl already under the net should have been exposed, and would have become so shy as entirely to forsake the place.

The first thing the decoy-man did on approaching the ditch was to take a piece of lighted turf or peat, and to hold it near his mouth to prevent the birds from smelling him. He was attended by a dog trained for the purpose of rendering him assistance. He walked very silently about half-way up the shootings, where a small piece of wood was thrust through the reed-fence, which made an aperture just large enough to enable him to see if any fowl were in; if not, he walked forward to see if any were about the entrance of the ditch. If there were, he stopped, made a motion to his dog, and gave him a piece of cheese, or something else, to eat; when the dog went directly to a hole through the reed-fence, and the birds immediately flew off the bank into the water. The dog returned along the bank between the reed-fences, and came out to his master at another hole. The man then gave the dog something more to encourage him, and the dog repeated his rounds until the birds were attracted by his motions, and followed him into the mouth of the ditch;—an operation which was called "working" them.

The man now retreated further back, working the dog at different holes until the ducks were sufficiently under the net. He then commanded his dog to lie down behind the fence, and going himself forward to the end of the ditch next the lake, he took off his hat, and gave it a wave between the shooting. All the birds that were under the net could then see him; but none that were in the lake could. The former flew forward, and the man then ran to the next shooting and waved his hat, and so on, driving them along until they came to the tunnel-net, into which they crept. When they were all in, the man gave the net a twist, so as to prevent them getting back. He then took the net off from the end of the ditch, and taking out, one by one, the ducks that were in it, dislocated their necks.

The net was afterwards hung on again for the repetition of the process; and in this manner five or six dozen were sometimes taken at one drift. When the wind blew directly in or out of the ditches, the fowl seldom worked well, especially when the wind blew into the ditch. The reason of this was, that the ducks always preferred swimming against the wind; otherwise, the wind blowing from behind catches and ruffles their feathers. If many ditches were made in the same lake, they were so constructed as to suit different winds, and were worked accordingly. The better to entice the fowl into the ditch, hempseed was occasionally strewn on the water.

There are, however, for these birds times of freedom; hence, one of our poets says:—

> "Now o'er our heads compact they fly,—
> See, as we speak, careering high,
> A flock of wild ducks clouds the air
> In wedge-like shape triangular;
> And grey-geese there, outstretched, combine
> Their troop in one unbroken line.
> Now in small bands dispersed, or each
> His prey pursuing o'er the beach,
> On their strong legs they wade; divide
> Deep down the gulfy food, and glide
> Afar unseen; or, rising, meet
> The breasting wave with wary feet;
> Their strokes alternately advance,
> And cleave secure the deep expanse."

THE DOMESTIC DUCK.

This bird exceeds the wild one in size, but it is neither so alert nor graceful, and domestication has deprived it of many of its original instincts. Instead of pairing with one mate, the male leads forth a troop of females; but, unlike the gallant chanticleer, he neither welcomes them to enjoy any delicacy, nor does he valiantly engage in their defence. The domestic duck varies considerably in size and in the colour of the plumage. The large white Aylesbury breed, which is prevalent in Buckinghamshire, where the rearing of ducks forms a part of the business of many cottagers, is one of those particularly noted.

When duck-eggs are placed under common hens, these fowls do not distinguish the spurious from the natural brood. But great is the agitation of the hen when she sees the ducklings betake themselves to the water, and fearlessly plunge into it. It is, however, an error to allow them to do so too soon, as rats, weasels, pike, and eels are their formidable foes, and when they have but little strength, they more easily make them their prey. Chickens, more exposed to observation while traversing the fields and farm-yard, escape many dangers which assail these little water-birds. Exempt from these, they are easily reared, having no fastidiousness of appetite, and becoming plump without penning or cramming. When they cannot do mischief by devouring delicate salads or young sprouting vegetables, a troop of ducks does good service in a kitchen-garden. Most industriously do they revel amidst snails and slugs, wood-lice and millipedes; and on some of these they will positively get fat.

THE MUSK DUCK.*

The tame duck intermingles with a common species often called the Muscovy Duck, but the proper name of which has just been given. This one exceeds the ordinary kind in size, differing greatly in colouring and in the form of the head and body. The male is much larger than the female. The general colour is glossy blue-black, varied more or less with white; the head is crested, and a scarlet fleshy space surrounds the eye, continued from scarlet caruncles or wattles on the beak. The feathers are larger, softer, and more lax than in the ordinary duck, and less adapted for aquatic habits. This bird exhales a somewhat powerful odour of musk.

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* Anas Moschata.

THE TEAL.*

This is one of the smallest and also of the most beautiful of British ducks. It is distributed over a great part of Europe, Northern Asia, and America. Multitudes every winter visit the fens of Britain, breeding, but not numerously, in the marshes of its northern counties. "Our indigenous broods," says Mr. Selby, "I am inclined to think, seldom quit the immediate neighbourhood of the place in which they were bred, as I have repeatedly observed them to haunt the same district from the time of their hatching till they separated and paired, on the approach of the following spring." The nest is formed of a large mass of decayed vegetables, with a lining of down and feathers, and contains eight or ten eggs. "Wild ducks and teal breed also," says Mr. Jesse, "amongst the heather in Woolmer Forest, and generally in the highest grounds. One of the woodmen, who has a cottage in the forest, informed me that he had found a teal's nest, with nine eggs in it, in a situation of this description."

Of the ducks we have now spoken; we turn, therefore, to their associates,—the Geese.

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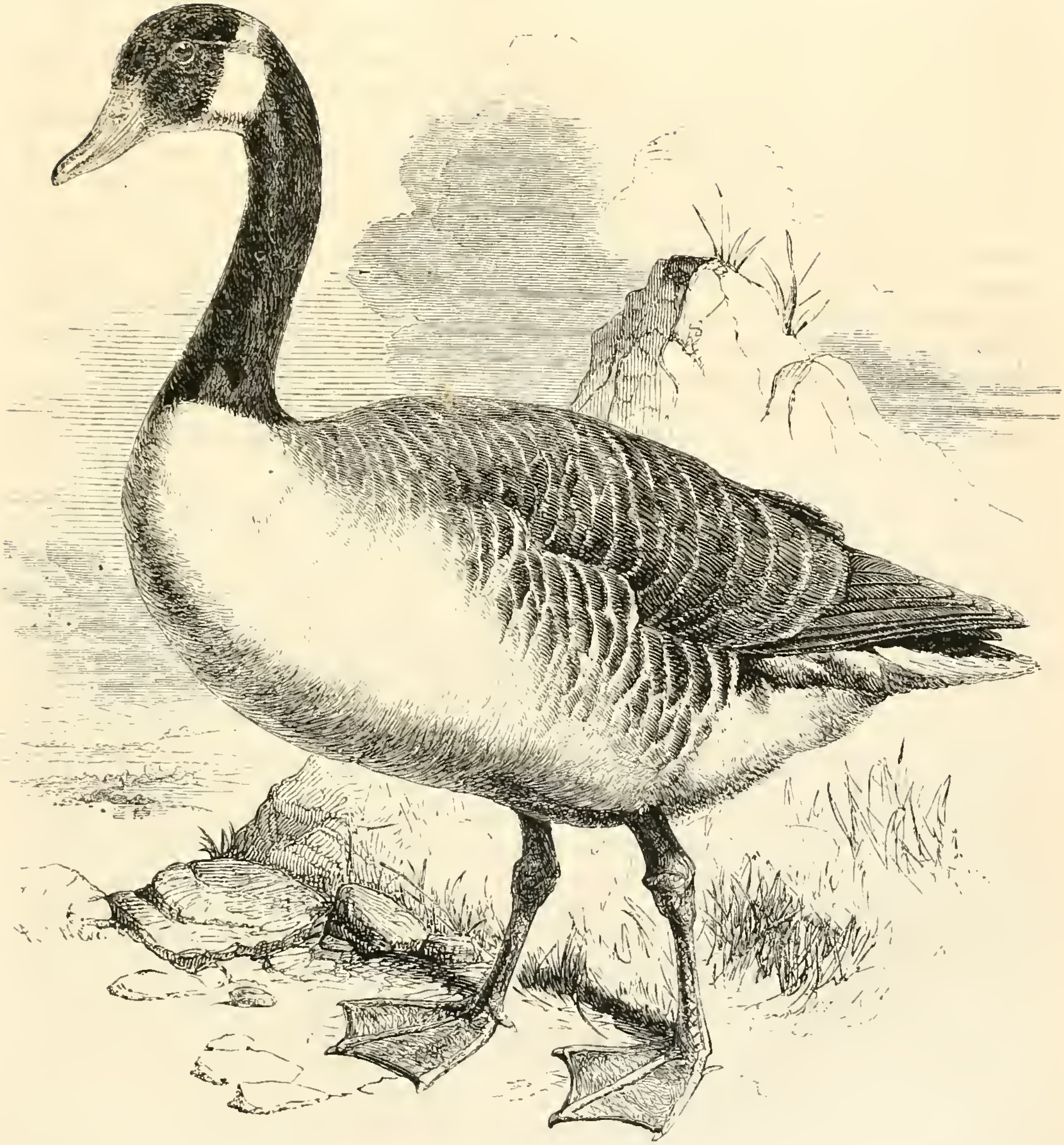
* Querquedula Erecca.

THE GEESE.*



THE CANADA GOOSE.†

The Canada goose is the ordinary wild goose of the middle and boreal regions of North America. It is a migrating bird, breeding in the higher latitudes, within the Arctic circle; whence, on the approach of winter, vast flocks wing their way southwards, where every means for their destruction is in active operation.

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* Anser.

† Anser Canadensis.—Willughby.

Though the ordinary European tame goose is kept in North America, the Canada goose is also kept as a domestic bird, and is said to thrive better than the former. In France and England it has been domiciled, and interbreeds with the common goose; the hybrids are highly esteemed for the very superior flavour and delicacy of their flesh. The Canada goose is said to be extremely watchful, and more sensible of approaching changes in the atmosphere than our ordinary species.

A writer in the "Magazine of Natural History" says: "In this neigbourhood (near Derby), we are frequently visited by small flocks of the Canada goose, which is a bird, I believe, of very local distribution. They always announce their approach by a loud noise, and, after wheeling two or three times round the piece of water near the house, they alight and commence grazing. They are very ornamental objects, stalking about the lawn, tossing their heads and making curious contortions with their long necks. It frequently happens that two remain when all the rest are flown. After reconnoitering the place for a few days, they usually fix on the corner of an island as their nesting-place. This favourite nook of theirs is not far from where a pair of moorhens, year after year, produce their young; yet neither goose nor moorhen ever interfere with each other, but keep on very good terms; nevertheless, the former does not permit her sooty companion to make too close an approach. After the female goose has fully made up her mind as to the locality of her nursery, she begins plucking feathers, straws, and other soft materials, until she has at last constructed a feather bed. Having laid her eggs, generally six, she sits with most exemplary patience, and notwithstanding the proximity of the water, which offers a great temptation, it is rare to find her off her nest. During the period of incubation the male is, through the greater part of the day, sailing in measured time and slow over the water, never approaching his mate very near, nor straying very far. On the approach of any intruder, he displays great uneasiness, and his tranquillity does not return till the danger is over. Shortly after the goslings have extricated themselves from their brittle covering, they are conducted to the water by the female, when they are joined by the male, who brings up the rear. The little family remain together till the return of the flock, when all mix promiscuously, recruit themselves for a few days, and then depart. A pinioned female was joined by a male. When they were approached the male did not fly away until he was pursued so closely as to be in danger of being caught; he remained with his mate as long as was consistent with his liberty; when that was in danger, and not till then, he deserted the female. Several of the wild goslings were obtained in the season of 1832; two of them passed into the hands of a neighbouring farmer, in whose possession they have remained ever since. They associate with his domesticated gray-leg geese, and are very peaceable. Montagu had observed, that the Canada goose will breed with the common species. Bewick says: 'Great numbers of these Canadian geese were driven from their haunts during the severe snow storms of January and February, 1814; they were taken upon the sea-shore, near Hartlepool, and divided among the farmers in the neighbourhood, no pains having been taken to keep the breed pure.'

A remarkable account of a Canada goose, the property of Mr. Sharpe, of Little Grove, East Barnet, was inserted by that gentleman in his copy of "Willughby's Ornithology," and he admits that he was aware it would with difficulty gain credit, were not a whole parish able to vouch for the truth of it. The substance of the story is as follows:—Though Canada geese are generally of a rambling disposition, this one was observed to attach itself in the strongest manner to the house-dog, and would never quit the kennel, except for the purpose of feeding, when it would return again immediately. It always sat by the dog; but never presumed to go into the kennel, except in rainy weather.

Whenever the dog barked, the goose would cackle and run at the person she supposed the dog barked at, and try to bite his heels. Sometimes she would attempt to feed with the dog; but this the dog, who treated his faithful companion with some indifference, would not suffer. This bird would not go to roost with the others at night, unless driven by main force; and when, in the morning, she was turned into the field, she would never stir from the yard-gate, but sit there the whole day, in sight of the dog. At last orders were given that she should no longer be molested, but suffered to accompany the dog as she liked. Being thus left to herself, she ran about the yard with him all night, and whenever the dog went out of the yard and went into the village, the goose always accompanied him, contriving to keep up with him by the assistance of her wings; and in this way of running and flying, followed him all over the parish.

This extraordinary affection is supposed to have originated from the dog having saved the goose from a fox, in the very moment of distress. While the dog was ill, the goose never quitted him day or night, not even to feed; and it was feared that she would have been starved to death, had not orders been given for a pan of corn to be set every day close to the kennel. At this time the goose generally sat in the kennel, and would not suffer any one to approach it, except the person who brought the dog's or her own food. On the death of the dog, the goose would still keep possession of the kennel; and a new house-dog, resembling in size and colour the one that was lost, being placed there, the poor bird was unhappily deceived; and going into the kennel as usual, she was seized and killed by the new occupant.

The Canada geese appear to be peculiarly susceptible birds, of which the following fact furnishes a singular illustration:—A gander of this tribe, in a nobleman's park near Windsor, having no mate for two springs, regularly mounted guard opposite a drawbridge, in front of a thicket, where, it was clear, he supposed there was a nest. He even defended the approaches very courageously, continuing this imaginary protection till the first brood of ducklings appeared from some other quarter, when he immediately took them under his protection, and one year actually chaperoned twenty-five. It should be added, that there was no nest of any kind whatever within the precincts he so strenuously defended.

Mr. Platt, a respectable farmer on Long Island, being out shooting in one of the bays which in that part of the country abound with water-fowl, wounded a wild goose. Being wing-tipped, and unable to fly, he caught it, and brought it home alive. It proved to be a female; and turning it into the yard with a flock of tame geese, it soon became quite tame and familiar; and in a little time its wounded wing entirely healed. In the following spring, when the wild geese migrate to the northward, a flock passed over Mr. Platt's barn-yard; and just at that moment their leader happening to sound his bugle-note, our goose, in whom its new habits and enjoyments had not quite extinguished the love of liberty, remembering the well-known sound, spread its wings, mounted into the air, joined the travellers, and soon disappeared. In the succeeding autumn, the wild geese, as was usual, returned from the northward in great numbers, to pass the winter in our bays and rivers. Mr. Platt happened to be standing in his yard when a flock passed directly over his barn. At that instant he observed three geese detach themselves from the rest, and, after wheeling round several times, alight in the middle of the yard. Imagine his surprise and pleasure when, by certain well-remembered signs, he recognised in one of the three his long-lost fugitive. It was she indeed! She had travelled many hundreds of miles to the lakes; had there hatched and reared her offspring; and had now returned with her little family to share with them the sweets of civilised life. . . . The birds were all subsequently living in his possession, and had shown no disposition whatever to leave him.

"The arrival of this well-known bird," says Dr. Richardson, "in the fur countries is anxiously looked for and hailed with great joy by the natives of the woody and swampy districts, who depend principally upon it for subsistence during the summer. It makes its first appearance in flocks of twenty or thirty, which are readily decoyed within gunshot by the hunters, who set up stalls, and imitate its call. Two or three, or more, are so frequently killed at a shot, that the usual price of a goose is a single charge of ammunition. One goose, which, when fat, weighs about nine pounds, is the daily ration for one of the company's servants during the season, and is reckoned equivalent to two snow-geese,* or three ducks, or eight pounds of buffalo and morse-meat, or two pounds of pemmican, or a pint of maize and four ounces of suet. About three weeks after their first appearance, the Canada geese disperse in pairs throughout the country, between the 56th and 67th parallels, to breed, retiring at the same time from the shores of Hudson's Bay. They are seldom or never seen on the coasts of the Arctic Sea. In July, after the young birds are hatched, the parents moult, and vast numbers are killed in the rivers and small lakes when they are unable to fly. When chased by a canoe, and obliged to dive frequently, they soon become fatigued, and make for the shore with the intention of hiding themselves; but as they are not fleet, they fall an easy prey to their pursuers. In the autumn they again assemble in flocks on the shores of Hudson's Bay for three weeks or a month previous to their departure southwards.

"It has been observed, that in their migrations the geese annually resort to certain passes and resting-places, some of which are frequented both in the spring and autumn, and others only in the spring. The Canada goose generally builds its nest on the ground; but some pairs occasionally breed on the banks of the Saskatchewan in trees, depositing their eggs in the deserted nests of ravens or fishing eagles. Its call is imitated by a prolonged nasal pronunciation of the syllable *wook* frequently repeated."

THE WILD GOOSE.†

This bird, sometimes called "the gray lag," is the origin of our domestic goose. According to Pennant, it is the only species that the Britons could take young and familiarise. It is the bird that saved the Capitol by its vigilance, and was cherished accordingly. Pliny speaks fully of it, states how these geese were driven from a distance on foot to Rome, mentions the value of their feathers, and relates that, in some places, they were plucked twice a year.

Pennant thus writes: "This is our largest species; the heaviest weigh ten pounds; the length is two feet nine inches; the extent five feet. The bill is large and elevated, of a flesh-colour tinged with yellow; the head and neck cinereous, mixed with ochraceous yellow; the hind part of the neck very pale, and at the base of a yellowish brown; the breast and belly whitish, clouded with gray or ash colour; the back gray; the lesser coverts of the wings almost white, the middle row deep cinereous slightly edged with white; the coverts of the tail and the vent-feathers of a pure white; the middle feathers of the tail dusky, tipped with white, the exterior feathers almost white; the legs of a flesh-colour."

The wild goose greatly varies, like most domesticated animals, in its reclaimed state; but it is said always to retain the whiteness of the coverts of the tail and the vent-feathers; it is esteemed in proportion to the whiteness of the plumage.

"The gray lag," says Mr. Gould," is known to inhabit all the extensive marshy districts throughout the temperate portions of Europe generally; its range northwards not extending further than the fifty-third degree of latitude, while southwards it extends to the northern portions of Africa, easterly to Persia, and we believe it is generally dispersed over Asia Minor."

This bird assembles in flocks, and seeks the most open and wild districts, often descending on fields of newly-sprung wheat, which with the blades of fine grasses, trefoil, and grain, constitute its food. Its nest is made on heathy spots, and in marshes, upon tussocks of rushes and dried herbs. There are five or six eggs, sometimes more, but rarely twelve or fourteen, of a dirty-greenish, or, as Gould remarks, of a sullied white.

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* Anas Nivalis.

† Anas Anser.—Linn.

THE DOMESTIC GOOSE.

The domestic goose is a bird of no little value. Not only does it figure with acceptance at the table, but its feathers are of great commercial worth, and for the sake of them alone thousands are kept in different counties, in order to meet, in some measure, the demands of the market, which, nevertheless, receives supplies from foreign parts.

"Tame geese," writes Pennant, "are kept in vast multitudes in the fens of Lincolnshire; a single person has frequently a thousand old geese, each of which will rear seven, so that towards the end of the season he will become master of eight thousand. During the breeding season these birds are lodged in the same houses with the inhabitants, and even in their very bed-chambers; in every apartment are three rows of coarse wicker pens, placed one above another; each bird has its separate lodge divided from the other, which it keeps possession of during the time of sitting. A person called a *gozzard*, i.e. goose-herd, attends the flock, and twice a day drives the whole to water, then brings them back to their habitations, helping those that live in the upper stories to their nests, without ever misplacing a single bird." These birds are reared now in other places also. The Messrs. Boyce, of Stratford, have pens capable of holding four thousand geese.

Rue aux Ours is the name of a street in Paris, formerly called *Rue aux Oies*, term for geese, and was given to it on account of the great number of *rotisseurs* that resided in it. Thus, the authors of the "Dictionnaire Historique de la Ville de Paris" say:—"The capons of Mans, the pullets of Mezerai, fattened by art, the chickens of Caux, and a thousand other luxuries, were absolutely unknown in those old times of moderation and contenance, when good morals prevailed, and our fathers, less sensual and delicate than the present generation, regaled themselves upon geese, a kind of fowl despised in an age where sensuality and gluttony have the ascendancy."

In France the goose has long been in little repute as a dish, and seldom appears on the tables of the epicures of Paris. The flesh they condemn as coarse and unwholesome, and our ordinary accompaniment of apple-sauce, when mentioned, never fails to elicit flashes of astonishment subsiding into peals of laughter. But the wings and thighs of geese made into pies, and properly truffled, are regarded as great delicacies. The department of Perigord, with Toulouse and Bayonne, used to cook annually about 120,000 of these pies. The *pâté de foie gras* is still in great requisition in France. But to obtain the delicacy great cruelty is practised. The wretched geese are nailed by the feet to a board, placed before a hot fire, crammed with food, and supplied with drink; and it is in this dreadful situation, that while fear wastes away their flesh, the liver becomes enormously swollen, and thus supplies the desideratum for those "who live to eat."

A barbarous practice, however, has long prevailed among ourselves. Thus Pennant says: "The geese are plucked five times in the year; the first plucking is at Lady-day, for feathers and quills, and the same is renewed four times more between that and Michaelmas for feathers only. The old geese submit quietly to the operation, but the young ones are very noisy and unruly. I once saw this performed, and observed that goslings of six weeks old were not spared; for their tails were plucked, as I was told, to habituate them early to what they are to come to. If the season prove cold, numbers of the geese die by this barbarous custom. When the flocks are numerous, about ten pluckers are employed, each with a coarse apron up to his chin. Vast numbers of geese are driven annually to London to supply the markets, among them all the superannuated geese and ganders (called the *cagmags*), which, by a long course of plucking, prove uncommonly tough and dry. The feathers are a considerable article of commerce; those from Somersetshire are esteemed the best, and those from Ireland the worst."

This wretched practice is still continued in many places. The annual mortality among geese where this system prevails, as in Lincolnshire and Ireland, is very great, and the birds that live through several operations become thin, feverish, and scarcely fit, or rather positively unfit, to eat. The excuse made for this barbarity is that the feathers thus obtained are superior in elasticity to those plucked from the dead bird; besides which a live one will constantly renew its plumage to undergo repeated strippings, and thus bring an increase of the profit without the destruction of the suffering birds.

Of the attachment of geese to particular persons there are many instances, of which the following is not a little remarkable:—A farmer, in Cheshire, had a flock of these birds, one of which, at the end of three years, and without any apparent cause, began to show a great partiality for its master. At first quitting its companions in the barn-yard, or pond, it stalked after him, and these symptoms of regard becoming daily stronger, in a short time it was at his heels, whether he went to the mill, the blacksmith's shop, or through the bustling streets of a neighbouring town. So great, indeed, was its perseverance, that he was compelled to fasten up the bird whenever he wished to go out alone.

As the farmer was accustomed to hold the plough, the goose walked sedately, not with the usual waddling pace of his tribe, but with a firm step, the head elevated, and the neck erect, a short way before its master, in the line of the furrows, frequently turning round and looking at him intently. When the plough was turned at the end of one furrow, the goose without losing its step, adroitly wheeled about, continued his attendance till evening, and then followed the farmer home. When allowed, it would mount on his lap as he sat by the fire after dark, and show the strongest signs of affection, nestling its head in his bosom, or preening the hair of his head with its beak, as it was wont to do its own feathers.

Sometimes the farmer would go out shooting; and no sooner had he shouldered his gun than the goose was at his side, following him as before, in spite of every obstacle; getting over the fences, as the farmer said, as well as he could himself. All this, it should be observed, continued, not only without any encouragement on the part of the farmer, but notwithstanding his determined opposition. And how long it would have remained we cannot tell; for unhappily, wonderful as was the attachment of this bird, the farmer superstitiously thought it foreboded some evil, and, in a moment of alarm, killed this attached and faithful companion.

THE SNOW GOOSE.[*]

The colour of this goose is white; the quills pitch-black, their shafts white towards the base; the head glossed with ferruginous, the tint in some individuals extending to the neck and middle of the belly; the bill, feet, and orbits are of aurora-red.

The Snow goose feeds chiefly on rushes, insects, &c., and in the autumn on berries. Wilson says, it tears up the roots of reeds, and other vegetables, from the marshes like the hogs, its powerful, strongly-serrated bill becoming for this purpose a most useful instrument. Of the berries, the crow-berry appears to be the favourite.

According to Dr. Richardson, this species breeds in the barren grounds of Arctic America in great numbers; their eggs are of a yellowish-white colour. At the end of August the young fly, and all have departed southward by the middle of September;

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[*] Anser Hyperboreus.

but it is said that the young do not attain the full plumage of the old bird before their fourth year, and until then they appear to keep in separate flocks.

In common with most of the true geese, the plumage of this bird adds to the comforts of many, and its flesh, when well fed, is excellent. It is said greatly to exceed in juiciness and flavour the flesh of the Canada goose. At the time of their departure southward from Severn Fort, in October, many thousands are killed by the inhabitants, who pluck them, and taking out the entrails, put their bodies into holes dug in the ground, covering them with earth, which, freezing above, keeps them perfectly sweet throughout the severe season, during which the inhabitants occasionally open one of these storehouses, and find the birds untainted and good. The same mode of preserving them appears to be practised in Siberia.

THE WHITE-FRONTED GOOSE.*

Of its habits in North America, Dr. Richardson observes, that "The Laughing Goose travels in great flocks, through the fur-countries, eight or ten days later than the Canada goose, and breeds on the coasts and islands of the Arctic Sea, north of the 67th parallel of latitude. The autumn migration southwards commences early in September; and its return at that season to the fur districts is often the first indication of winter having begun within the Arctic Circle. The Indians imitate the call of this goose by patting the mouth with their hand while they repeat the syllable *wah*. The resemblance of this note to the laugh of a man has given some of the trivial names to this species. It passes on toward the United States, in advance of the Canada goose; and Mr. Audubon says that it arrives before the latter in Kentucky, where many of the species winter; but many also, he is convinced, go entirely to the southward of the United States boundary." The same naturalist informs us that this species leaves its winter quarters a fortnight sooner than the Canada goose, which is different from the order of their appearance on the banks of the Saskatchewan. Its flesh is superior to that of the Canada goose. It frequents grassy ponds.

THE BEAN GOOSE.†

During an excursion made by a party of naturalists in Sutherlandshire, in the summer of 1834, Mr. Selby says: "We were agreeably surprised to find that the Bean Goose annually breeds upon several of the Sutherland lakes. The first intimation we received of this interesting fact was at Lairg, where we were informed that a few pairs bred upon some islands about twelve miles up Loch Shin. We accordingly took boat the following morning, and, upon arriving at the place, discovered a single pair, attended by four or five young goslings. None were obtained, as the old birds being wild, escaped, seemingly uninjured, although repeatedly fired at; and the goslings immediately dived, and escaped into the reeds and other herbage. Upon Loch Naver we also found several pairs attended by their young, seemingly about a fortnight or three weeks old, one of which, after a severe chase, we procured. Upon the islands of Loch Laighal, from thirty to forty pairs, we were informed, annually had their nests. We saw several old birds, and the nests that had been used, which are concealed in heath, upwards of three feet in height, that covers the islands. The eggs were all hatched, and most of the young had betaken themselves to the neighbouring moors, where they continue till able to fly, secreting themselves when disturbed in the highest heather. At Tongue we saw some goslings about a month old (following a hen), which had been hatched from eggs taken at Loch Laighal. We were told they became nearly as tame as common geese, but refuse to intermix or breed with them. The eggs, from five to seven in number, are smaller than those of the common goose, but of a similar shape and colour."

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* Anser Erythropus.

† Anser Segetum.

Ducks and other water-birds are, if possible, more assiduous in trimming their feathers than land-birds. The closeness of their plumage serves to present an impenetrable texture to the water in which they swim, as well as a smooth surface, which diminishes the effects of friction in their progress. One reason, therefore, of their practice appears to be, that any slight derangement of their plumelets is readily felt, from the air getting, in consequence, quick across to the skin; and thus they right their feathers, as we, on a sudden blast, button our coats. .

Among the *Anatidæ* there are familiar examples of various and vocal language, followed by corresponding actions in marshalling their flights. The sounds and articulations of the domestic goose and duck, in particular, are very numerous and marked, nor is it difficult to learn the definite meaning of many of them. In the endeavour of birds to persuade their offspring to fly and to dive, so unusual, varied, and marked are their articulations and tones, that we might imagine we heard a definite language. The sounds of a domestic fowl when a hawk is approaching, when it intends to sit, when it calls its young to feed, and many others equally familiar, are not less various and definite. The quarrels of sparrows are almost as articulate as those of a human contest, and the noises of these birds are still more varied. The destruction of a rook's nest is preceded by a congregation of the society, and a great noise; and it is well known that the work is executed by a deputation of two or three individuals out of this convention.

THE BERNICLE GOOSE.*

As a singular specimen of credulity and fallacious reasoning, we give an extract from the "Herbal" of Gerard, who lived in the reign of Queen Elizabeth: "There is," he says, "a small island in Lancashire, called the Pile of Foulders (on the west side of the entrance into Morecombe-bay, about fifteen miles south of Ulverston), wherein are found the broken pieces of old and bruised ships, and also the trunks and bodies, with the branches of old and rotten trees cast up their likeness; whereon is found a certain spume or froth, that, in time, hardeneth unto certain shells, in shape like those of the muskle, but sharper pointed, and of a whitish colour, wherein is contained a thing in form like a lace of silke, finely wove as it were together; one end whereof is fastened unto the inside of the shell, even as the fish of oisters and muskles are; the other end is made fast unto the belly of a rude mass or lump, which in time cometh to the shape and form of a bird; when it is perfectly formed, the shell gapeth open, and the first thing that appeareth is the aforesaid lace or string; next come the legs of the bird hanging out, and, as it groweth greater, it openeth the shell by degrees, till at length it is all come forth, and hangeth only by the bill; in short space after, it cometh to full maturitie, and falleth into the sea, where it gathereth feathers, and groweth to a fowl bigger than a Mallard, and lesser than a Goose, which the people in Lancashire call by no other name than a Tree-Goose; which place aforesaid, and all those parts adjoining, do so much abound therewith, that one of the best is bought for three-pence."

The popular error that the molluscous animal called the Bernicle contained the young of a species of goose, called in consequence the Bernicle Goose, lasted for many ages, and still prevails among the uneducated on the shores of all the European seas. One reason of the continuance of this error in several Roman Catholic countries, is the permission granted by the priest to eat this goose on fish-days, because it was considered to partake more of the character of a fish than of a fowl.

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* Anser Bernicla.

It may seem strange to the reader, yet the following notice, sent by Sir Robert Moray to the Royal Society, actually appears in their printed Transactions. He says: "The pedicle seems to draw and convey the matter which serves for the growth and vegetation of the shell, and the little bird within it. In every shell that I opened I found a perfect *sea-fowl*, the little bill like that of a *goose*, the eyes marked; the head, breast, wings, tail, and feet formed; the feathers everywhere perfectly shaped, and blackish coloured; and the *feet* like those of other water-fowl to my best remembrance. Nor did I ever see any of the little birds alive, nor met with anybody that did; only some credible persons have assured me that they have seen some as big as their fist."

So much for grave statement; another, of a different kind, is thus given by Lady Fanshawe, who was in France in 1649:—"When we came to Calais, we met with the Earl of Strafford and Sir Kenelm Digby, with some others of our countrymen. We were all feasted at the governor's of the castle, and much excellent discourse passed; but, as was reason, most showed, was Sir Kenelm Digby's, who had enlarged somewhat more in extraordinary stories, than might be averred, and all of them passed with great applause and wonder of the French then at table; but the concluding one was, that barnacles, a bird in Jersey, was first a shell-fish to appearance, and from that, sticking upon old wood, became in time a bird. After some consideration, they unanimously burst out into laughter, believing it altogether false; and, to say the truth, it was the only thing true he had discussed with them. That was his infirmity, though otherwise a person of most excellent parts, and a very fine-bred gentleman."

THE BRENT GOOSE.[*]

This species is the smallest and most numerous of the geese that visit the British Islands. It makes its appearance in winter, and appears over the whole range of those coasts and estuaries that are much frequented by the other migrant geese. The head, neck, and upper part of the breast, the quills, the rump, and tail, are black. The rest of the plumage is reddish ash-colour, more or less mottled; the under and upper tail coverts, the vent-feathers, and the belly, are white. The bill is short and black; the feet of the young birds have a tint of dull reddish colour, but in the mature state they are black. The flesh of this bird is very agreeable.

Mr. Selby states, that a very large body of these birds annually resort to the extensive muddy and sandy flats that lie between the mainland and Holy Island, on the Northumbrian coast, and which are covered by every flow of the tide. This part of the coast appears to have been a favourite resort of these birds from time immemorial, where they have always received the name of *Ware Geese*, given to them, doubtless, in consequence of their continually feeding on marine vegetables.

According to Wilson, this bird's line of march in America very much resembles that of the Canada Goose, excepting that frequently three or four are crowded together in the front, as if striving for precedency. Flocks continue to arrive from the north, and remain until the weather becomes very severe, when they move off southwardly. During their stay, they feed on the bars at low water, seldom or never in the marshes. Their principal food is a remarkably long and broad-leaved marine plant, of a bright green colour, which adheres to stones, and is called by the country people sea cabbage. They eat also shell-fish.

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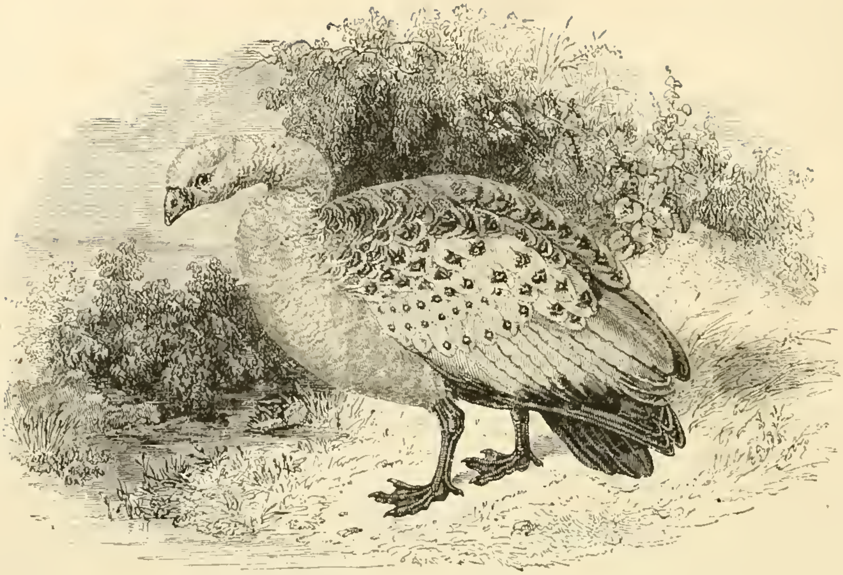
[*] Anser Brenta.

These birds never dive, but wade about, feeding at low water. During the time of high water, they float in long lines, particularly in calm weather. Their voice is hoarse, and when some hundreds are screaming together, they recall the noise of a pack of hounds in full cry. Though the Brent never dives in search of food, yet when wing-broken, it will go a hundred yards at a stretch under water, and is considered, in such circumstances, one of the most difficult birds to kill.

The Brent goose generally weighs about four pounds avoirdupois; it measures two feet in length, and three feet six inches in extent. The only material difference observable between the plumage of the male and female, is, that in the latter the white spot on the neck is less, and more mottled with dusky.



THE NEW HOLLAND CEREOPSIS.*

This remarkable bird is a native of New Holland, on several parts of which it is very abundant; it does not, however, visit the interior, but is confined to the borders of the sea, and especially to the small islands adjacent to the mainland.

The characters which distinguish this bird from the geese, though not very important, are well marked, and embrace striking modifications of various organs. They consist chiefly in the form of the bill, the naked part of which is extremely short, and forms a kind of truncated hook; in the large open nostrils placed near the middle of the cere, which is very broad, and leaves but a small portion of the bill uncovered; in the somewhat greater length of the legs, which are bare of feathers for some distance above the knees; in all the toes being more robust; and in the number of tail-feathers, which are sixteen in the cereopsis, while there are only twelve in the goose.

Labillardière states, that many of these birds first seen by him suffered themselves to be taken by the hand; but the rest becoming apprised of their danger, speedily took flight. Considerable numbers were taken by the crew of Captain Flinders' vessel, both at Lucky Bay and Goose Island, by knocking them down with sticks, and some of them were secured alive.

According to M. Bailly, those seen by him at Preservation Island evinced so little shyness, and suffered themselves to be approached so readily, that his boat's crew were able, without any trouble, to procure a sufficient quantity to victual them during their stay. The flesh of these geese is described by Bass as being excellent; D'Entrecasteaux considered it much more delicate than that of the European goose; and Flanders states that on Presevation Island it formed the best repasts of his men.

These birds are to be seen in the gardens of the Zoological Society. Some of them formed a part of an extensive royal collection kept, in the reign of the last king, at Windsor. They bred there as freely as the emeus or any of the other animals of New Holland, and were all descended from one pair, originally brought to this country. These birds are perfectly tame, and in their behaviour resemble geese, but with more disposition to become familiar.

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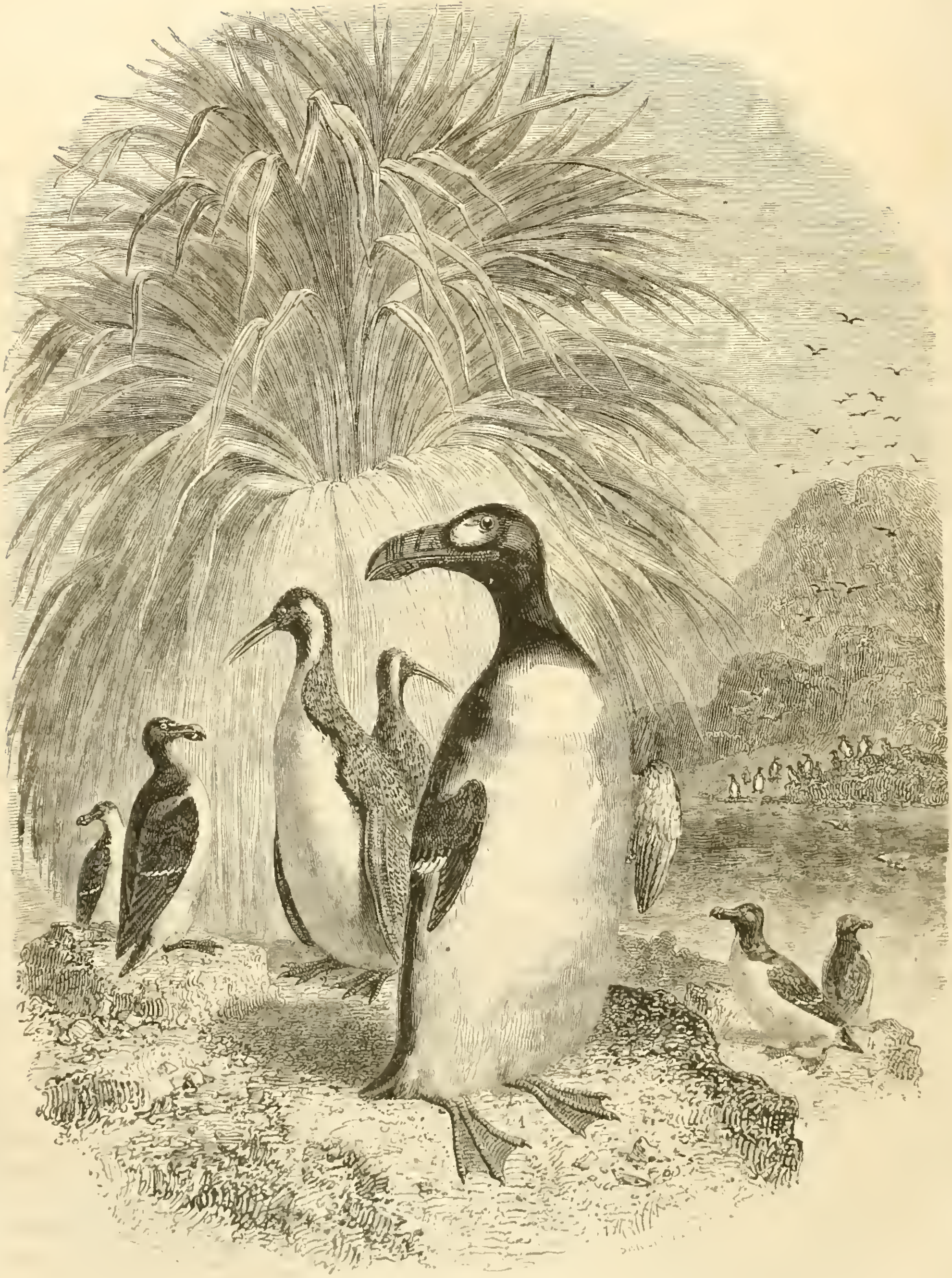
* Cereopsis Novæ Hollandiæ.



1.—GREAT AUK (*Alca Impennis*).
2 & 4.—THE BLACK-BILLED AUK (*Alca Torda*).
[3.—THE KING PENGUIN (*Aptenodytes Patagonica*).

THE EGYPTIAN GOOSE.*

Aristotle mentions this bird as haunting the banks of lakes and rivers. It is also named in two of the comedies of Aristophanes. Athenæus praises it on account of its eggs, giving them the second place, those of the peacock being assigned the first; and Ælian alludes to its cunning.

Herodotus, however, directs special attention to the Egyptian Goose. He shows it was held sacred by the Egyptians, and modern travellers found evidence of its being, at least, a favourite dish among the priests. Mr. Salt remarks: "Horus Apollo says, the old geese stay with their young in the most imminent danger, at the risk of their own lives, which I have myself frequently witnessed. Vulpanser is the Goose of the Nile, and wherever this goose is represented on the walls of the temples in colours, the resemblance may be clearly traced." It is also stated that a place in Upper Egypt had its name, Chenoboscion, or Chenoboscia (' goosepens '), from these birds being fed there, probably for sale. These, however, may have been sacred geese, as the goose is said to have been a bird under the care of Isis.

The bill of the Egyptian Goose is as long as the head, slender, nearly straight, rounded at the tip, and laminated on the margin. The upper mandible is slightly curved, the nail hooked, and the lower mandible flat. The wings resemble those of the spur-winged goose, on the bend of the wing or wrist of which is placed a strong, white, horny spur, about five-eighths of an inch in length, turning upwards, and rather inwards.

The sexes are nearly similar; the female is rather smaller than the male, and its colouring is less intense. There is a narrow edging of feathers round the base of the bill, a line running nearly straight from that edging to the eye, and a larger patch surrounding the eye, of a chestnut hue. In the middle of the breast there is also a patch of dark chestnut; the rest of the under part of the body, from the slight collar to the thighs, is of a pale buff, with fine irregular transverse blackish brown lines. The legs and feet are of a reddish flesh-colour.

Mr. Gould states that he has placed the Egyptian Goose among the "Birds of Europe," not from the number of half-reclaimed individuals which are annually shot in Britain, but from the circumstance of its occasionally visiting the southern parts of the Continent, from its native country, Africa. M. Temminck points out the Island of Sicily as one of the places frequented by it, and adds that this is the species which would appear to have been held in great veneration by the ancient Egyptians, as we frequently find a figure of it among the monuments of that celebrated people. He states that it is abundant on the banks of the Nile, and is distributed over the whole of the vast continent of Africa. This handsome species breeds freely in confinement, and is often seen in the aviaries and near the lakes of those who take pleasure in collecting and domesticating ornamental water-birds.

"The breeding habits of this bird in a wild state are," says Mr. Yarrell, "I believe, but little known: they hatch and rear their young without difficulty in confinement, and have bred several seasons in succession in the Gardens of the Zoological Society.

"In the summer of 1838, an Egyptian goose, in those gardens, paired with a Penguin drake—so called from its walking nearly upright, but which is only a variety of the Common Domestic Duck—and the eggs were productive. The same two birds were kept together in the following season, and the result was, more productive eggs. The young birds were preserved, and kept by themselves, experimentally.

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* Anser Ægyptiacus.—Briss. Chenalopex Ægyptiacus.—Gould.

"Besides various instances of single specimens of the Egyptian goose having been obtained in this country, a flock of five were seen in the Fern Islands in April, 1830. A small flock visited the Tweed in February, 1839. Three were shot at Campsie, near Glasgow, in November, 1832. Mr. Wallace, of Douglas, sent me word that a flock of nine were seen in the Isle of Man, in September, 1838. This species has been killed in Ireland. Four were shot on the Severn, near Bridgewater, in February, 1840; two were shot in Dorsetshire, in 1836." Colonel Hawker mentions two killed in Norfolk, and three at Longparish, in Hampshire, in the winter of 1823; and the next year again, during some tremendous gales from the west, a flock of about eighty appeared near the same place, when two more were killed.

THE SPUR-WINGED GOOSE.*

Bewick thus describes a specimen of this African bird, killed in Cornwall in June, 1821:—"The bill is reddish-yellow, with a jointed protuberance on the base of the upper mandible. The upper part of the head and neck are dingy brown; the auriculars and sides of the throat are white, spotted with brown; the lower part of the neck, sides of the breast, and all the upper plumage appear black, but this colour is lost, particularly in the scapulars and testials, which are most resplendently bronzed and glossed with brilliant green, and most of the outer webs of the other feathers partake of the same hue; on the bend of the wing or wrist is placed a strong white bony spur; the whole of the edges of the wing, from the alula spuria to the elbows and shoulders, are white, all the under parts the same. This beautiful bird is nearly of the bulk of the wild goose, but its legs and toes are somewhat longer, and of a red or orange yellow."

This bird was presented to Mr. Bewick by Mr. Henry Mewburn, of St. Germain's; and the following particulars, supplied by him, are given by G. T. Fox, Esq., in his "Synopsis of the Newcastle Museum:"—"When first seen, it was in a field adjoining the cliffs, at Port Wrinkle, a small fishing-place about four miles from St. Germain's, near which it remained for two or three days. Being several times disturbed by attempts to shoot it, it came more inland, to a low-situated farm, called Pool, and there associated with the common geese, but was wild, and immediately took wing on being approached. Here it kept to and fro for a day or two, but being much disturbed, left, and came down upon the shore of the St. Germain's river or estuary, where, the following day, the 20th of June, 1821, it was shot by John Brickford, in a wheat-field at Sconnor, about a mile from St. Germain's.

"When killed, it was in the most perfect state, having only one shot in the head. Some gentlemen, who saw it the following day, requested him to let me have it, which he promised; but, though he knew I was a bird-stuffer, he had a wife, who, from some strange infatuation, thought she could stuff it; but being soon convinced of her inability, she cut off the wings for dusters, and threw the skin away; and it was not till three weeks afterwards that I heard of the circumstance, when I sent a servant, who brought it covered with mud, the head torn off, but luckily preserved, as also one wing, when I had it washed, and put it together as well as I was able. The skin, in this state, was obligingly forwarded to Newcastle, by Mr. Mewburn, for Mr. Bewick's use, from whence it passed into Mr. R. Wingate's hands, who has most ably re-set it, and thus preserved one of the most uncommon ornithological rarities ever known in England."

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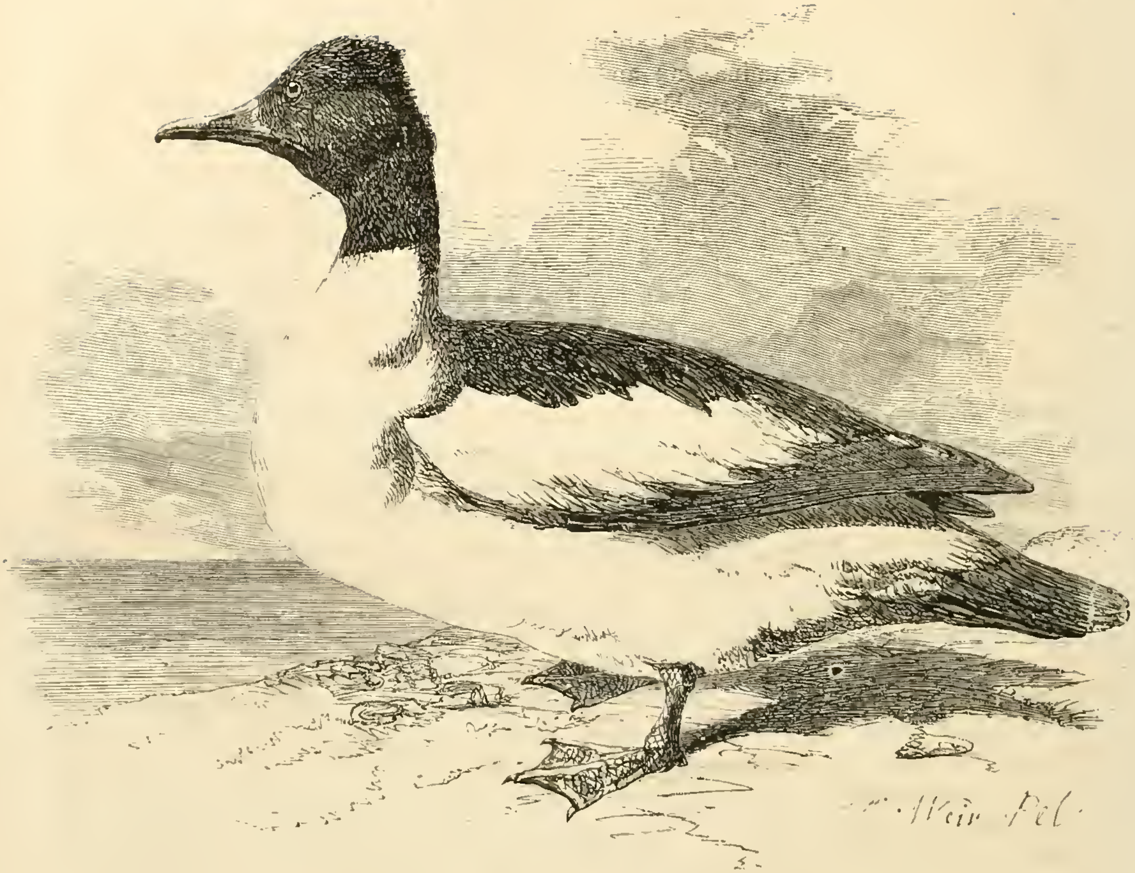
* Anas Gambensis.—Berwick.

This bird inhabits Western and Northern Africa. It is more rare in collections than the Egyptian goose; but it has lived well in the Gardens of the Zoological Society. A male in the Collection of the Dublin Zoological Society paired with an Egyptian goose. The organs of voice of the spur-winged goose are of a peculiar structure: the death of a male specimen in the Gardens of the Zoological Society of London afforded opportunity for their examination; and the result, accompanied by an engraving, is given by Mr. Yarrell, in his valuable work on "British Birds."

THE MERGANSERS.*



THE GOOSANDER.†

The birds belonging to the genus *Mergus* live on lakes, ponds, and rivers. They destroy a vast abundance of fish, and, for their destructive powers in this respect, have been compared to the otters. It is for the purpose of retaining the slippery fish that the mandibles and tongues of these birds are furnished with dentilations and papillæ, which facilitate the entrance of food into the gullet. So great is the bulk of the fish that they sometimes swallow, that they cannot be introduced completely into the stomach, the body descending there only when the head is digested. The gizzard of the Merganser is less muscular than that of the ducks; their intestines and cæca are shorter; the swallowing part of the lower larynx in males is enormous, and partly membranous.

These birds, in swimming, hold the head alone out of the water. They also dive to a great depth in search of prawns. As the air which they have the power of accumulating in the trachea permits them to remain some time under water, without coming to the surface to respire, they only reappear at very considerable distances. Though their wings are short, their flight is long and rapid; but the situation of their feet renders their walk vacillating. They dwell habitually in the Arctic regions of the two worlds, and there it is that they most usually reproduce. They are seen only in winter in temperate climes, where their arrival, in great numbers, is considered to prognosticate a severe season. This opinion is, doubtless, well-founded, as they are driven from the North by the density of the ice, which prevents them from obtaining their usual aliment on the lakes and rivers of those climes.

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* Mergus.

† Mergus Merganser.

In spring they return northwards, but the places in which they nestle are doubtful. It seems that it is in the rushes which border lakes and rivers, between rolled pebbles, in bushes, or even hollow trees, that the female deposits her eggs. They vary from twelve to fourteen in number. The Mergansers have but one moulting, but M. Temminck states that the old males pass through that process in spring, while the females and the young males moult in autumn.

The native locality of the Goosander appears to be the northern regions of the continents of Europe and America, where, among large and unfrequented lakes, these birds find an asylum and a breeding-place, as their summer haunts. From thence they migrate southwards on the approach of the severities of winter, seldom appearing in our latitudes unless the season indicates an exceedingly low temperature in the Arctic Circle; at such times they frequent the shores of Britain and its unfrozen lakes, either in pairs or in small flocks of seven or eight. The extensive inland waters of Holland and Germany, however, appear to be its favourite resort.

This species was shot at Fulham, near London, in the severe winter of 1837. It appears, from Dr. Richardson's statements, that they merely winter in Pennsylvania, and migrate in summer to rear their young in the fur countries. The Prince of Musignano mentions it as rather scarce in Rome, as not common in the same season, in Philadelphia, and as occurring in Europe and America generally. It has been seen in Japan by more than one naturalist.

Acerbi, in his travels, when on the banks of a river near Kardis in Lapland, gives the following fact: "The *Mergus merganser*, instead of building a small nest, like the ducks, on the banks, or among the reeds and rushes, chooses to lay her eggs in the trunk of an old tree in which time, or the hand of man, has made such an excavation as she can conveniently enter. The person that waylays the bird for her eggs places against a fir or pine tree, somewhere near the bank of the river, a decayed trunk, with a hole in its middle; the bird enters and lays her eggs in it; presently the peasant comes, and takes away the eggs, leaving, however, one or two.

"The bird returns, and, finding but a single egg, lays two or three more, which the man purloins in the same manner; the bird still returns, and, as if she had forgot the eggs she had laid, proceeds once more to complete the number she intended. She is defrauded of her eggs as before, and continues repeating the same process four or five times, when the man, who has by this time gathered perhaps a score of eggs from the same nest, suffers her to lay the last for the increase of her family. As soon as the eggs are hatched, the mother takes the chicks gently in her bill, carries and lays them down at the foot of the tree, when she teaches them the way to the river, in which they instantly swim with an astonishing facility."

The food of the Goosander consists of small fish, amphibious animals, small crustaceans and mollusks. Its nest is placed among rolled pebbles on the banks of waters, in bushes or hollow trees, where it lays twelve or fourteen whitish eggs, which are nearly equally pointed at each end. Graves, who tasted one of these birds, states that its flesh is offensive in the highest degree.

THE RED-BREASTED MERGANSER.*

Pennant states that this bird breeds on Loch Mari, in the county of Ross, North Britain, and also in the Isle of Islay. According to Latham, it inhabits most parts of Northern Europe; it is found as high as Iceland, and also in the Russian dominions about the great rivers of Siberia, and the Lake Baikal. It is said to be frequent in Greenland and to breed on its shores. It is frequently brought from the shores of the Delaware to the Philadelphia market. In the United States they are generally migratory; but Wilson says that a few of them are seen in autumn, though he had not discovered any of their nests.

These birds frequent the sea-shore, keeping within the bays and estuaries of rivers. They swim low in the water, and, when wounded in the wing, very dexterously contrive to elude the sportsman or his dog by diving, and coming up at a great distance, raising the bill only above water, and dipping down again with the utmost silence. The young males of a year are often found in the plumage of the females. Their food consists of small fry and various kinds of shell-fish.

The windpipe of the male of this species, according to Wilson, is very curious, and differs from that of the Goosander. About two inches from the mouth it swells out to four times its common diameter, continuing that size for about an inch and a half. This expansion then continues of its first diameter for two inches or more, when it becomes flattish, and almost transparent, for two more inches; it then swells into a bony labyrinth of more than two inches in length by one and a half in width, over the hollow sides of which is spread a yellowish skin-like parchment. The left side of this, fronting the back of the bird, is a hard bone. The divarications come out very regularly from this at the lower end, and enter the lungs.

The design of this expanding structure is probably to enable the bird to carry down a supply of air for the support of respiration while diving; and "yet," as Wilson asks, "why should the female, who takes the same submarine excursions, be entirely destitute of this apparatus?

THE HOODED MERGANSER. †

In describing this bird, an accidental visitor in Britain, but well known in America, Mr. Audubon, thus writes: "Its broad and rounded crest of pure white, with an edging of jetty black, and which it closes or spreads out at pleasure, renders the male of this species conspicuous on the waters to which it resorts. The activity of its motions, the rapidity of its flight, and its other habits, contribute to render it a pleasing object to the students of nature not less than the sportsman. Its flesh, however, has a fishy taste and odour, although it is relished by some persons.

"It seems to prefer fresh water, and is by no means very frequent along the sea-coast. Long, narrow, and moderately deep creeks, or small ponds, are more frequented by it than large rivers or lakes. On the waters of the western and southern States these mergansers are seen to arrive from the north early in October; but generally later than many species of ducks, although sooner than either the red-breasted merganser or the goosander. At the approach of night, a person standing still on the banks of such a river as the Ohio, first hears the well-known sound of wings whistling through the air; presently after, a different noise, as if produced by an eagle stooping on her prey; when, gliding downwards with the rapidity of an arrow, he dimly perceives the hooded mergansers sweeping past.

"Five or six, perhaps ten, there are; with quick beats of their pinions, they fly low over the waters in wide circles. Now they have spied the entrance of a creek; they shoot into it, and in a few seconds you hear the rushing noise which they make as they alight on the bosom of the still pool. Up the creek they proceed, washing their bodies by short plunges, and splashing the water about them. Now they dive for minnows, which they find in abundance, and which no doubt prove delicious food to the hungry travellers. At length, having satisfied their appetite, they rise on wing, fly over the creek with almost incredible velocity, return to the broad stream, rove along its margin, until they meet with a clean sand-beach, where they alight, and where, secure from danger, they repose until the return of day.

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* Mergus Serrator.—Linn.

† Mergus Cucullatus.—Selby.

" This bird ranges throughout the United States during winter, content with the food it meets with in the bays and estuaries of the eastern coast, and on the inland streams. The dam of the Pennsylvanian miller is as agreeable to it as that of the Carolinian rice-planter; even the numerous streams and fords of the interior of the Floridas are resorted to by this species, and there I have found them full of life and gaiety, as well as on the Missouri and on our great lakes. When the winter proves too cold for them they go southwards, many of them removing towards Mexico.

" The Hooded Merganser is a most expert diver, and so vigilant that at times it escapes from the best percussion-gun; as to shooting at it with a flint-lock, you may save yourself the trouble, unless you prevent it from seeing the flash of the pan. If you wound one, never follow it; the bird, when its strength is almost exhausted, immerses its body, raises the point of its bill above the surface, and in this manner makes its way among the plants, till finding some safe retreat along the shore, it betakes itself to it and there remains, so that you may search for it in vain, unless you have a good dog. Even on wing it is not easily shot. If on a creek ever so narrow, it will fly directly towards its mouth, although you may be standing knee-deep in the middle. It comes up like a ball, rises and passes overhead with astonishing speed; and if you shoot at it, do not calculate upon a hit. You may guess how many one may shoot in a day.

" Like all the rest of the tribe, which, when far north, for the want of hollow trees, breed on the moss or ground, the hooded mergansers that remain with us nestle in the same kind of holes or hollows as the wood ducks; at least I have found their nests in such situations seven or eight times, although I never saw one of them alight on the branch of a tree, as the birds just mentioned are wont to do. They dive, as it were, directly into their wooden burrows, where, on a few dried weeds, and feathers of different kinds, with a small quantity of down from the breast of the female, the eggs are deposited. They are from five to eight, measure one inch and three-fourths by one and three-eighths, and in other respects resemble those of the red-breasted merganser.

" The eggs are laid in May, and are hatched some time in June. The young, like those of the wood-duck, are conveyed to the water by their mother, who carries them gently in her bill; for the male takes no part in providing for his offspring, but abandons his mate as soon as incubation has commenced. The affectionate mother leads her young among the tall rank grass which fills the shallow pools or the borders of creeks, and teaches them to procure snails, tadpoles, and insects. On two occasions the parents would not abandon the young, although I expected that the noises which I made would have induced them to do so; they both followed their offspring into the net which I had set for them. The young all died in two days, when I restored the old birds to liberty.

" The hooded mergansers which leave the United States take their departure from the first of March to the middle of May, and I am induced to believe that probably one-third of them tarry for the purpose of breeding on the margins of several of our great lakes. When migrating, they fly to a great height, in small flocks, without any regard to order. Their notes consist of a kind of rough grunt, variously modulated, but by no means musical, and resembling the syllables *croo, croo, crooh.* The female repeats it six or seven times in succession when she sees her young in danger. The same noise is made by the male, either when courting on the water, or as he passes or rises near the hole where the female is laying one of her eggs."

THE TERNS.*

THE COMMON TERN.†

The Terns have also been called *Sea-Swallows*, from the resemblance of their forked tail, their long wings, and their constant habit of shaving the surface of the water in all directions, in pursuit of small fish, to those of the swallows.

The Terns are continually on the wing, and, though web-footed, are not seen to swim. They rest but seldom, and only on the land. Their food consists chiefly of small fish and mollusks, which they seize on the surface of the water; but they also catch aerial insects. They send forth sharp and piercing cries in flying, particularly during nestling time. In calm weather they sometimes rise very high, and are often seen to come plump down.

The young differ from the adult and aged only before the moulting, which is double in the known species. There is no external difference between the sexes. The females deposit their eggs, usually two or three in number, in a cavity, and these nests are sometimes so close that the sitting birds touch each other.

Terns are, some assert, found in both continents, from the seas, lakes, and rivers of the North, as far as the vast coasts of the Austral Ocean, and in almost all the intermediate climates. In Tahiti they rest upon the bushes; and Forster, in a walk before the rising of the sun, has caught many of them that were sleeping along the pathways. The species are very numerous.

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[*] Sterna.

[†] Sterna Hirundo.

The Common Tern in its adult state is from thirteen to fourteen inches in length. The forehead, top of the head, and long feathers of the occiput are deep black; the posterior part of the neck, back, and wings, bluish-ash; the lower parts pure white, with the exception of the breast, which is slightly clouded with ash-colour. The bill is crimson-red, often blackish towards the point. The iris is reddish-brown. The feet are red.

Though not universally found on the British coasts, it is, nevertheless, very abundant on the southern shores; it is less so on the northern. Its range is not extended over the American continent; but it is supposed to reach from the Arctic Circle to the Mediterranean, and even to the coasts of Africa and India.

"The Common Tern," says Mr. Gould, "although not universally dispersed over our coasts, is nevertheless a very abundant species, being found in great numbers over the southern shores, but more sparingly over the northern, which are almost exclusively inhabited by its near ally, the Arctic Tern. It is now satisfactorily ascertained that the common tern does not extend its range to the American continent, and that its place is there supplied by another species, to which the Prince of Musignano, now Prince of Canino, has given the specific appellation of *Wilsoni*, in honour of the celebrated ornithologist by whom it was first described.

"The common tern does not confine itself entirely to the sea, but frequently resorts to inland streams, etc.; and when, thus ascending our creeks and rivers, these little fairies of the ocean fearlessly fish around our boats, nothing can be more pleasing than to observe their poise and dip. When, with their scrutinising eyes, they have observed a fish sufficiently near the surface, they precipitate themselves upon it with unerring certainty, and rapidity that is truly astonishing. This mode of capture strongly reminds us of the fissirostral tribe among the land-birds, and they may indeed be truly termed the swallows of the ocean, their long and pointed wings, and small but muscular bodies, being admirably adapted for rapid and sustained flight, and affording the means by which they are enabled to traverse the surface of the deep with never-tiring wings."

THE NODDY TERN.*

The wings of this bird reach beyond the rounded tail. The forehead is white, passing into gray-ash towards the top of the head, and into a deeper gray at the occiput; in front of the eyes there is a deep black patch; the throat and cheeks are gray-brown; all the upper and lower plumage is chocolate or sooty-brown. The bill and feet are black. The length of the bird is about a foot.

Of the habits of this bird, Mr. Nuttall thus speaks:—"Familiar to mariners who navigate in the equatorial regions, the Noddy, like the voyager, frequents the open seas to the distance of some hundred leagues from the land; and, with many other birds of similar appetites and propensities, they are seen in great flights, assiduously following the shoals of their finny prey. They pursue them by flying near the surface of the water, and may now be seen continually dropping on the small fish which approach the surface to shun the persecution of the greater kinds, by which they are also harassed.

"A rippling and silvery whiteness in the water marks the course of the timid and tumultuous shoals; and the whole air resounds with the clangor of these gluttonous and greedy birds, who, exulting or contending for success, fill the air with their varied but discordant cries. Where the strongest rippling appears, there the thickest swarm of noddies and sea-fowl are usually assembled. They frequently fly on board of ships at sea, and are so stupid or indolent on such occasions, as to suffer themselves to be taken by the hand from the yards on which they settle; they sometimes, however, when seized, bite and scratch with great resolution, leading one to imagine that they are disabled often for flight by excessive fatigue or hunger. Some have imagined that the appearance of the noddy at sea indicates the proximity of land; but, in the manner of the common tern, they adventure out to sea, and, like the mariner himself, the shelter of whose friendly vessel they seek, they often voyage at random for several days at a time, committing themselves to the mercy of the boundless ocean; and having at certain seasons no predilection for places, when the climate suits, the roving flocks or stragglers find equally a home on any coast, shoal, or island."

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* Sterna stolida.—Jenyns.

Mr. Audubon writes: "About the beginning of May the noddies collect from all parts of the Gulf of Mexico and the coasts of Florida, for the purpose of returning to their breeding places on one of the Tortugas, called Noddy Key. These birds form regular nests of twigs and dry grass, which they place on the bushes or low trees, but never on the ground. On visiting their island on the 11th of May, 1832, I was surprised to see that many of them were repairing and augmenting nests that had remained through the winter, while others were employed in constructing new ones, and some were already sitting on their eggs. In a great many instances, the repaired nests formed masses nearly two feet in height, and yet all of them had only a slight hollow for the eggs, broken shells of which were found among the entire ones, as if they had been purposely placed there. The birds did not discontinue their labours, although there were nine or ten of us walking among the bushes; and when we had gone a few yards into the thicket, thousands of them flew quite low over us, some, at times, coming so close as to enable us to catch a few of them with the hand. On one side might be seen a noddy carrying a stick in its bill, or a bird picking up something from the ground to add to its nest; on the other, several were seen sitting on their eggs, unconscious of danger, while their mates brought them food. The greater part rose on wing as we advanced, but re-alighted as soon as we had passed. The bushes were rarely taller than ourselves, so that we could easily see the eggs in the nests. This was quite a new sight to me, and not less pleasing than unexpected. The noddy, like other species of terns, lays three eggs, which average two inches in length by an inch and three-eighths in breadth, and are of a reddish-yellow colour, spotted and patched with dull red and faint purple. They afford excellent eating, and our sailors seldom failed to collect bucketsful daily, during our stay at the Tortugas. The wreckers assured me that the young birds remain along with the old through the winter, in which respect the noddy, if this account be correct, differs from other species, the young of which keep by themselves until spring. At the approach of a boat the noddies never flew off their island, in the manner of the sooty terns. They appeared to go further out to sea than those birds in search of their food, which consists of fishes mostly caught amid the floating sea-weeds; these terns seized them, not by plunging perpendicularly downwards, as other species do, but by skimming close over the surface in the manner of gulls, and also by alighting and swimming around the edges of the weeds. This I had abundant opportunities of seeing while on the Gulf of Mexico. The flight of this bird greatly resembles that of the night-hawk when passing over meadows or rivers. When about to alight on the water, the noddy keeps its wings extended upwards, and touches it first with its feet. It swims with considerable buoyancy and grace, and at times immerses its head to seize on a fish. It does not see well by night, and it is for this reason that it frequently alights on the spars of vessels, where it sleeps so soundly that the seamen often catch them. When seized in the hand it utters a rough cry, not unlike that of a young American crow taken from the nest. On such occasions it bites severely, with quickly-repeated movements of the bill, which, on missing the object aimed at, closes with a snap. Some which I kept several days refused all kinds of food, became dull and languid, and at length died."

THE ARCTIC TERN.*

The "Bristol Mirror" of 1842 records the following fact, which occurred at a time when there was very blowing weather:—"During the high winds that prevailed on Sunday, May 8th, our harbour and floating docks were visited by large flights of the rare and beautiful species, the Arctic Tern. The birds were assembled in such vast numbers, that two or three hundred were killed with stones and other missiles, whilst several were caught alive; and so tame were they, that many were observed to pitch on the backs of passers-by.

"This tern, as its name indicates, is a native of the higher Arctic regions, and has been met with in all the late expeditions to the Polar Seas. It is a summer visitant to the coasts of Scotland and the North of England, but is rarely met with more southerly, and until the present time there was no instance on record of a specimen having been obtained in this neighbourhood. The appearance of such vast flights of Arctic birds, rare as a species, in the very heart of a large city, is an occurrence as remarkable as it is interesting. Flocks of these birds were also observed the same day at Clevedon, Weston, and other places along the Channel coast."

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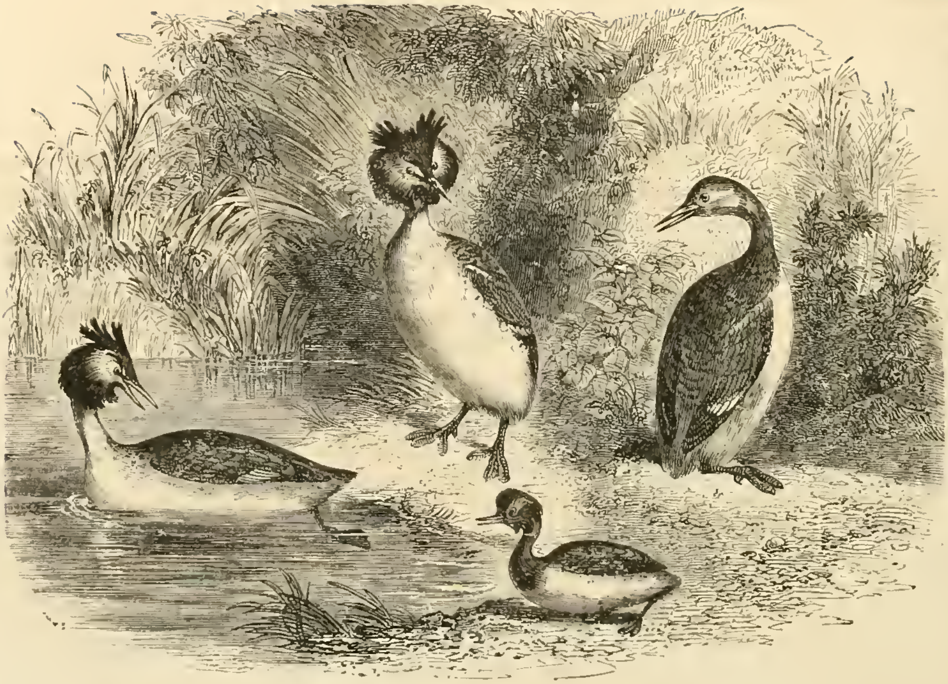
* Sterna Arctica.

THE GREBES.*



THE CRESTED, THE HORNED, THE EARED, AND THE LITTLE GREBE.

The Grebes, instead of true webs, have the toes enlarged as in the coots, and the anterior united only at their base by membranes. The claw of the middle toe is flat; the tarsi strongly compressed. The semi-metallic shining of their plumage has caused it to be frequently used by furriers. Their tibia is elongated towards the point, which affords a more extensive insertion for the extensor muscle of the leg.

These birds live on lakes and ponds, and build in the rushes. In certain countries, it appears, they carry their young under their wings. Their appearance and plumage change so much with age, that naturalists have over-multiplied the species of these birds.

The Grebe is not adapted to sit upright like the penguin. When resting on the land, it lies prone on its whole body, and consequently shuffles along like a seal, pushing itself onwards by striking the ground with its feet. But to its life as a swimming-bird it is perfectly adapted.

The grebes swim with equal facility either on or beneath the surface of the water; in the latter case they use their wings as if flying in the liquid element. Their food consists of fishes, insects, and aquatic reptiles; but the stomach, when dissected, is usually found to contain a mass of feathers, which it would appear the bird had taken from its own plumage.

The quickness with which the grebes dive is very remarkable; so instantly is the plunge made, that they are able to avoid the shot from a fowling-piece, fired by a common flint-lock, and they will then make a stretch of two hundred yards before coming up to breathe, which is done by merely raising the head for a second above the water.

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* Podiceps.

The title given to this genus of birds refers to the lobated form of their toes, which differ from those of every other race of aquatic birds. Instead of being webbed, as in the duck tribe and others of the *Natatores*, they are completely separate and flattened, having their edges furnished with a broad stiff membrane, each toe being, in fact, a distinct and beautifully-formed paddle. Of the three anterior toes, the outermost is the longest and largest; the next is nearly as large, and its outer edge lies tile-like over the inner membrane of the outermost; the innermost toe is less than the middle one, on which its outer edge impinges. The hind toe is short, placed high on the leg, and furnished with a lobated membrane. The arrangement of the scales crossing the toes gives to them a leaf-like appearance; for the lines dividing the scales run in regular succession obliquely upwards from a central line or shaft, formed by the bones advancing to the tips, which are covered with a broad flat nail. The leg is short, and flattened laterally, so as to cut the water when drawn up after each stroke.

The largeness of the outer toe, at the first glance surprising, is a necessary and beautiful provision; for by this arrangement the impetus of the stroke of each foot is carried in a line obliquely forwards to the anterior part of the chest, to which it converges; while, were the structure arranged differently, the line of the impulse of the stroke would diverge from the body, and there would be a waste of power.

The nests of these birds are placed among the thick reeds and luxuriant aquatic herbage of marshes, or the sedges which border fresh-water lakes and rivers. They are composed of masses of half-decayed roots, dried flags, and other similar materials. Each one is large and compact, but roughly constructed, and rises and falls according to the rise and fall of the water on which it floats. There are three or four eggs.

THE CRESTED GREBE.*

This bird is the largest of the genus. It breeds annually amidst the moors and fens of our marshy districts. As the winter sets in, and the still waters begin to freeze, it migrates to the larger rivers and there moults, where it obtains fish and small crustacea, which form its winter food.

When Mr. Selby was making a tour through Holland, accompanied by Sir W. Jardine, he gave chase to a crested grebe, on one of the lakes in the neighbourhood of Rotterdam, and though in a boat, conducted by those accustomed to the business, it cost severe exertion for upwards of an hour and a half to get within range, and secure it by a shot through the neck.

THE HORNED GREBE.†

This species is plentiful in the north-east of Europe, in Northern Asia, and in North America. Dr. Richardson found it in the fur countries, frequenting every lake with grassy borders.

THE EARED GREBE.‡

This bird occasionally breeds in the eastern counties of England, and is common in the northern parts of Europe.

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* Podiceps Cristatus.

† Podiceps Cornutus.

‡ Podiceps Auritus.

THE RED-NECKED GREBE.*

The bird just named appears to be more partial to the sea than any of the other species. It is only a winter visitant to the shores of Britain ; its breeding-places being within the Arctic regions. It was observed during Franklin's expedition in 1822 upon the Great Slave Lake. It is common in the north-eastern parts of Europe.

THE LITTLE GREBE.†

This is the smallest and most interesting of the grebes. It is common in all the southern counties of Britain, wherever ponds and small lakes, fringed with reeds and dense herbage, offer it a refuge. Shy and wary, on the least appearance of danger, it dives instantly, and takes shelter amidst the reeds, where it is effectually concealed.

The cautious observer may see it, accompanied by its mate, or followed by its little brood ; and pleasant it is to observe them sporting with such admirable ease and celerity.

The life of this bird, often called the Dabchick, is passed almost entirely on the water. It usually builds a floating nest, fixed to the surrounding tufts of herbage, so as to render it secure. Sometimes it does not float ; it is then raised upon a mass of withered matted vegetables, the *débris* of former years. It contains five or six eggs of a greenish white, which are carefully covered every time they are quitted by the female.

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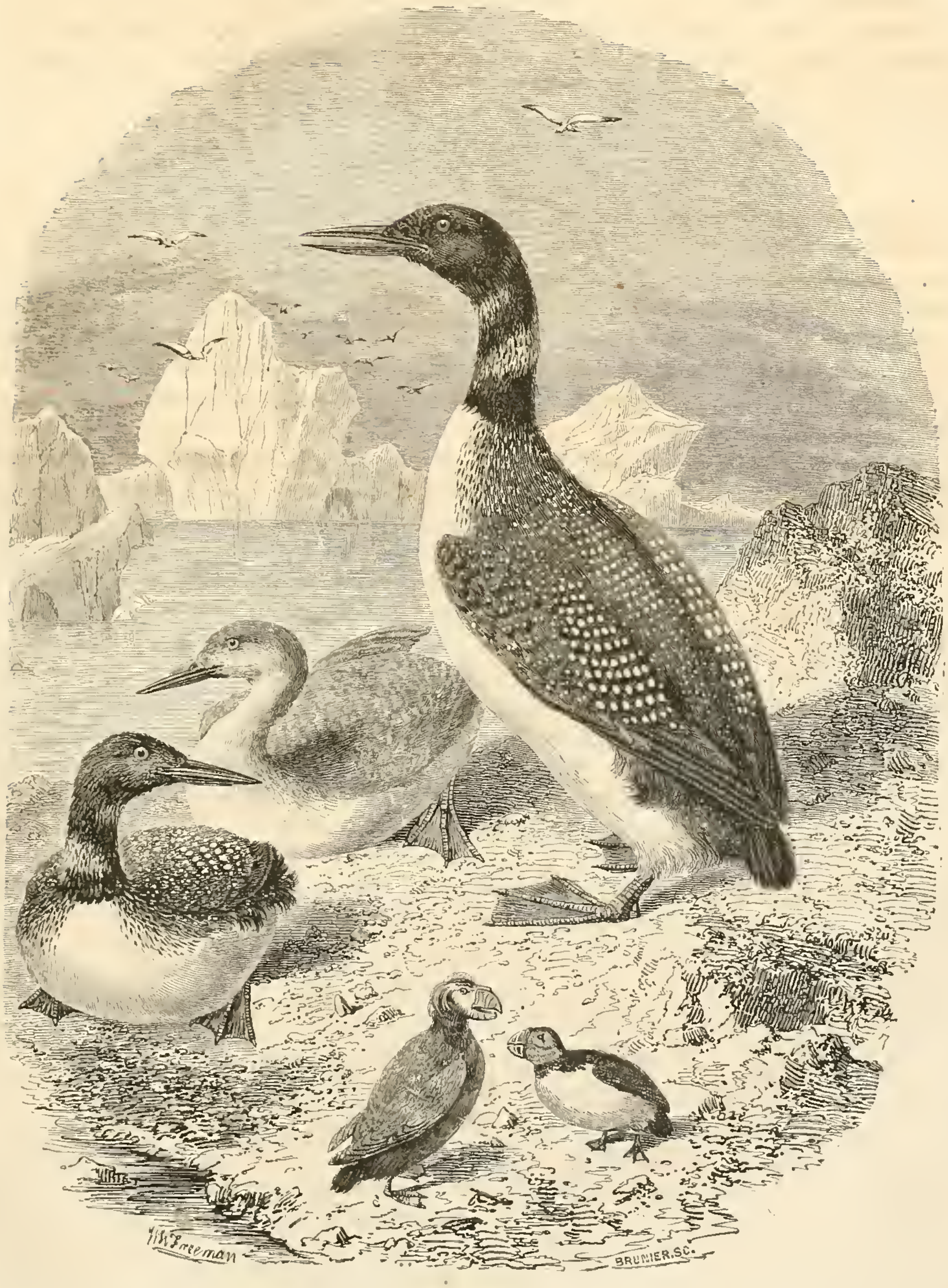
* Podiceps Rubricollis.

† Podiceps Minor.

THE DIVERS.*



The Divers nearly resemble the grebes, from which they differ but little, except in their palmated feet. Like them, too, while on the land they are beset with difficulties in their locomotions; on the water, they are entirely at ease.

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* Mergus.

In these birds the legs are situated more posteriorly than they are in any other bird. This causes their walking to be painful, and obliges them, when on shore, to preserve a vertical position. As, moreover, the greater part of them are bad fliers, and as many of them cannot fly at all, on account of the extreme shortness of their wings, they may be considered as almost exclusively confined to the surface of the water. In consequence of this their plumage is closer, and it often presents a smooth surface, with a silvery brightness. They swim under water with the help of their wings, almost in the manner of fins. They have a peculiar muscle on each side the lower larynx.

THE GREAT NORTHERN DIVER.*

This bird is about two feet and three-quarters long, with the upper parts black, spotted with white; the head and neck glossy black, with green reflexions; the lower parts are white; the tail has twenty feathers. This species is generally distributed in the cold and temperate climates of the northern hemisphere. It breeds in the Arctic regions, generally on the margin of lakes or on islands, laying three eggs of a dull olive tint, spotted with dusky.

The Northern Diver, the chief bird of the species, being easily scared, and instantly taking refuge under water, is shot with difficulty, but is sometimes accidentally caught in nets, or by hooks at a considerable depth. Its cry has been likened to the howling of dogs. Immediately under the skin there is a layer of fat, nearly an inch thick; but the flesh is considered uneatable. The skin, which is tough and covered with soft down, is, in some of the northern countries, tanned and used as clothing.

"Though this handsome bird," says Dr. Richardson, "is generally described as an inhabitant of the ocean, we seldom observed it either in the Arctic Sea or Hudson's Bay; but it abounds in all the interior lakes, where it destroys vast quantities of fish. It is rarely seen on land, its limbs being ill-fitted for walking, though admirably adapted to its aquatic habits. It can swim with great swiftness, and to a very considerable distance under the water; and when it comes to the surface, it seldom exposes more than the neck. It takes wing with difficulty, flies heavily, though swiftly, and frequently in a circle round those who intrude on its haunts. Its loud and very melancholy cry, like the howling of the wolf, and at times like the distant screams of a man in distress, is said to portend rain. Its flesh is dark, tough, and unpalatable."

THE RED-THROATED DIVER.†

A native of the same cold climates as the other divers, it coincides also with their habits. So constant are the male and female in their attachments, that if one of them be shot, the other hovers about the spot for days together, and will sometimes venture so near the sportsman as to share the same fate. They make a howling and sometimes a croaking noise, which the Orcadians regard as a presage of rainy or stormy weather. They are seldom seen far south, except in very severe seasons; but in winter they visit England, France, and other countries. In the Orkneys they statedly breed. The nest, which is placed in marshy situations among reeds and flags, is usually composed of moss and grass, lined with down from the bird's own breast. It contains two very oblong, olive-brown eggs, marked with a few dusky spots. In the harbour of Stromness this species has been observed to make great havoc among the fry of the coal-fish.

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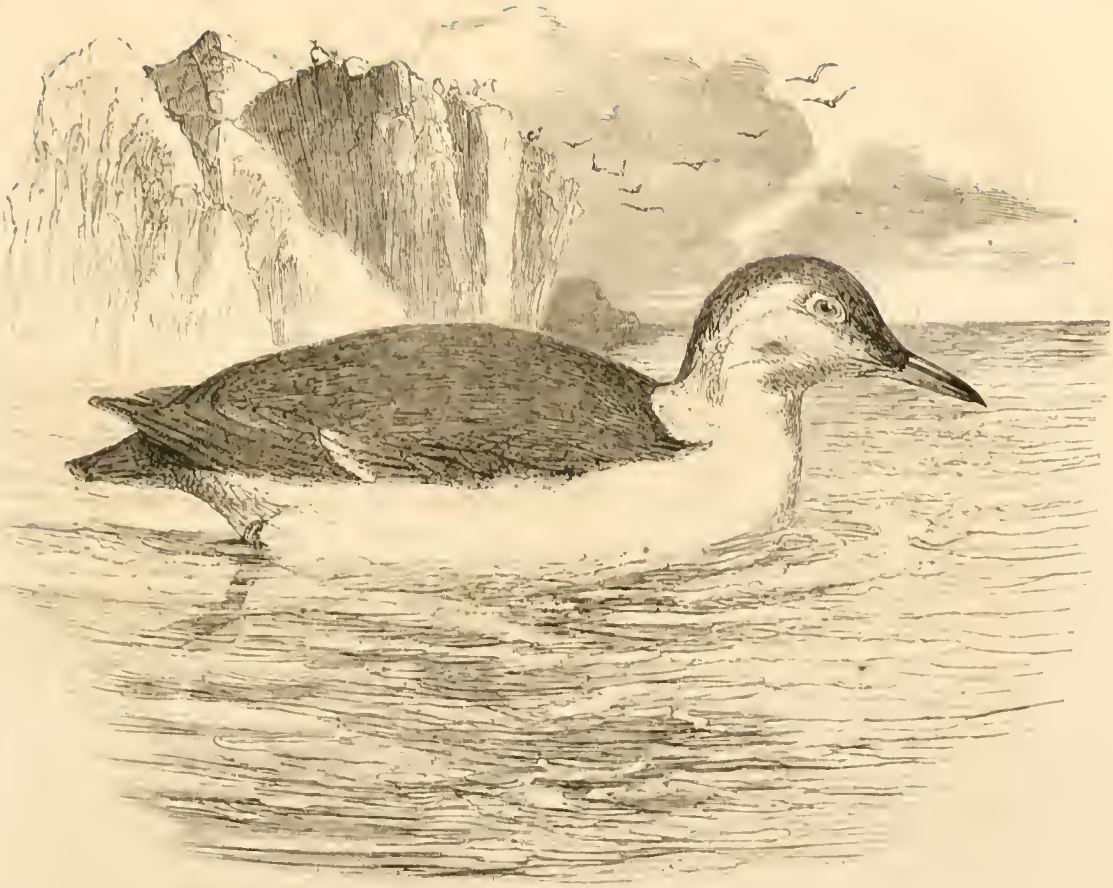
* Colymbus Glacialis.

† Colymbus Septentrionalis.



THE COMMON OR FOOLISH GUILLEMOT.*

The birds which build on the fresh-water cliffs of the Isle of Wight are principally puffins, razor-bills, guillemots, and cormorants. "Their number," says Gilpin, "can only be described by the expression of darkening the air. They sit commonly, when they are not in motion, on the ledges of the cliffs, in the crannies of which they rear their young. You see them ranged in black files through a considerable space. The report of a gun brings them all out of their recesses; and the air, which a moment before was still and quiet, is now beaten with myriads of busy wings, and filled with screams and cries as various as the tribes from which they issue."

The Guillemots are active and rather lively birds, which inhabit the northern seas, procuring their food, consisting of small fishes and crustacea, by diving from the surface and pursuing it under water, in which they glide with great rapidity by means of their wings. These organs are not large, but, as they are quickly moved by strong muscles, the birds are able to fly with great speed. Their feet, however, not being adapted to locomotion on land, are scarcely used for that purpose, but they enable them to paddle along very expertly on the water. They form no nests, but deposit their extremely large eggs on the bare surface of the rocks; and there also their young ones crouch until partially or entirely fledged. The eggs afford good eating; but the flesh of both the young and old birds is rank and unpleasant.

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* Uria Troile.

The Common Guillemot inhabits the northern seas of Europe, Asia, and America, emigrating in large troops, in winter, to the coasts of Norway, the Baltic, Holland, and France, but more rarely wandering to the inland lakes of continents. It often breeds, in company with the auks, among the cliffs of the rocks, as in the Island of Priestholm near Anglesea, the Fern Isles on the coast of Northumberland, and the precipitous rocks near Scarborough.

This bird is perhaps nowhere so abundant as at the interesting spot just mentioned, in the neighbourhood of the Needles, and along the adjacent precipitous coast. At the end of April great numbers of these birds may be seen flying in strings along the coast towards their breeding-places, which are always abrupt cliffs. No preparation is made for the reception of the eggs. The shelves, on which the eggs are deposited, are often very narrow, and even sloping; all are, however, laid together as close as possible, merely allowing room for each bird to sit upon her own egg, which is done in an upright position. Ranged in compact rows, the guillemots live, each one intent on her task, in social harmony. It is manifest that each bird can distinguish its own egg in such circumstances. A very little inequality suffices to steady an egg, and it is further prevented from rolling off the steep by its shape. Many eggs fall in stormy weather, and are driven over by the birds themselves when flying off abruptly on being fired at. When the young are hatched, they are plentifully supplied with sprats and small fish, till, in the course of five or six weeks, they are capable of taking to the water and of fishing for themselves. This bird is often called the *Foolish* Guillemot, but for this there is no just reason.

In St. Kilda it arrives about the beginning of February, and is hailed by the inhabitants as the harbinger of plenty. A rock-man will descend in the night, by the aid of a rope, to the ledge of a precipice, where he fixes himself, and tying round him a piece of white linen, awaits the approach of the bird, which, mistaking the cloth for a portion of the rock, alights on it, and is immediately despatched.

In places where they are seldom molested, it is with difficulty these birds are put to flight, and they may sometimes be taken with the hand, while others flounder into the water, making, apparently, but little use of their wings. In Orkney they continue throughout the winter. They are sometimes very numerous in the Frith of Forth, where they seem to subsist principally on sprats.

"It is interesting," says that accomplished ornithologist, the late Mr. Macgillivray, "to visit one of these great breeding-places, and in a boat proceed along the cliffs, whether a gun be used or not; to stand on a near promontory and see the multitudes perched on the rocks, or flying out to sea, or returning; or to look down from the summit upon the groups in sight, or startle from their slumber a whole troop by letting down a stone; or to descend by some crevice, clinging with fingers and unshod feet to the little narrow ledges, and creep among the eggs, or be let down dangling on a rope, and half-trembling with fear and excitement. Very pleasant all this, but very unscientific and unphilosophical—so think the very small would-be-great men, who concoct prize-essays in colleges, and write popular treatises on the sciences, and have everything reduced to principles, and want only a turkey-cock's wattles and tail to make a great figure in the world. The vain-glory of these persons, some of whom never observed a fact correctly, contrasts characteristically with the modesty of the Humboldts, and Cuviers, and Milne-Edwardses, and Owens, who never depreciate any truth, nor despise any earnest endeavours."

THE BLACK GUILLEMOT.*

This is one of the most beautiful of our sea-birds. "Suppose yourself," says Mr. Macgillivray, "floating on the swell of the Atlantic along the base of a cliff decorated with luxuriant tufts of Rhodiola rosea, Silene maritima, and Statice armeria, and entertained by guillemots, auks, and starlings. Here and there are narrow cracks, perpendicular and inclined. In most of them, after a shot has been fired, you will see some two or more of the Black Guillemots looking down upon you, half-afraid to remain, and loath to leave their eggs and young. Another shot is fired, and you see them bounce away on rapidly-moving wings. There, on a shelf, a dozen of them have alighted in a row. Their black plumage, entwined by the two white ring-spots, and their singular-looking red feet, contrast with the barren rock."

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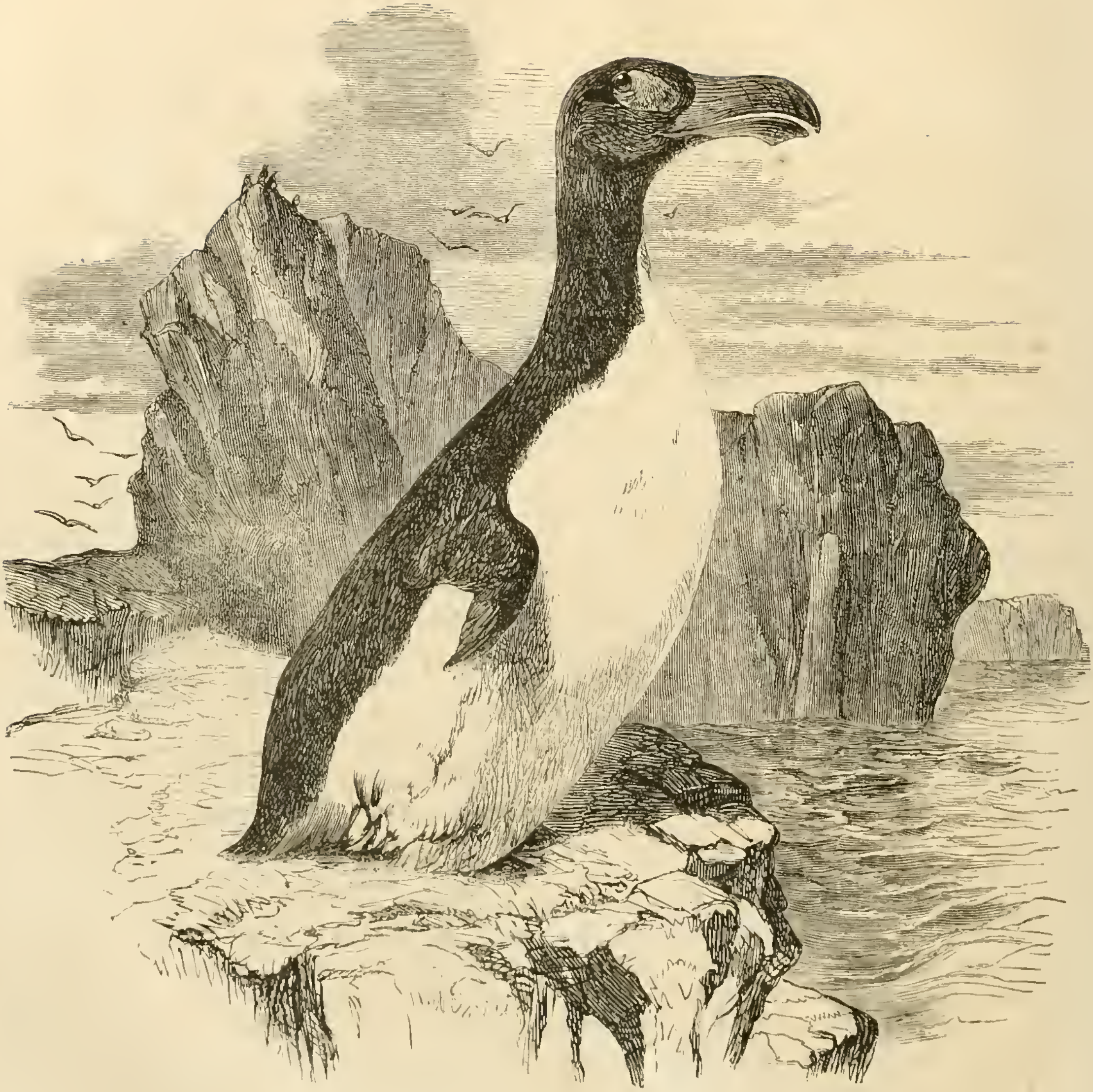
* Uria Grylle.

THE AUKS.*



THE GREAT AUK.†

The true Auks breed in large companies, in caverns and rocky cliffs, laying only one disproportionately large egg. They obtain their food by diving, in which they are materially assisted by their wings as well as by their feet. It consists of small fish, crustacea, and other marine animals. The young are said to be fed from the crops of their parents, not only before, but after they are able to leave the place of their birth.

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* Alca.

† Alca impennis.

The Great Auk is an inhabitant of the Arctic Seas, but its history has not yet been satisfactorily traced. We know only that it extends from the extreme north to the Orkney Islands and St. Kilda; a few, however, have been seen as far south as Devonshire and Waterford. It is generally considered as a scarce bird.

When Mr. Bullock made his tour of the Orkneys in 1813, he was informed that one male only had made his appearance for a long time, which had regularly visited Papa Westra for several years. The female, which the natives called the Queen of the Auks, was killed just before Mr. Bullock's arrival; the king, or male, that gentleman had the pleasure of chasing for several hours, in a six-oared boat, but without being able to kill him. The rapidity with which he pursued his course under water was almost incredible. Very soon after, however, the male bird was sent to Mr. Bullock, and it is now in the Ornithological Collection of the British Museum.

The Great Auk is remarkable for the imperfect development of its wings: its length is somewhere about three feet; and its wings are destitute of the feathers requisite for flight. The wings are very short, not exceeding four inches and one-fourth from the tips of the largest quill-feathers to the first joint, and, though useless for the purposes of flight, are very serviceable in swimming under water. The great auks frequent the frozen seas as far north as navigators have penetrated, seldom straying far from land or floating ice, and yet never quitting the water but for the purposes of breeding, being nearly as unfit for walking as for flying; and when on shore, like other auks and penguins, holding themselves in a nearly vertical position.

THE RAZOR-BILL, OR RAZOR-BILLED AUK.*

The full-grown individuals of this species measure about fourteen or fifteen inches in length, and twenty-seven in extent of wing. They inhabit the Arctic Seas of both continents, and migrate to the coasts of Norway, Holland, France, and Great Britain. Not only do they associate with guillemots, but they breed in the same places.

About the beginning of May, they take possession of the highest cliffs for the purpose of incubation, assembling on the ledges of the rocks in great numbers, and sitting closely together, often in a series of rows, one above another. There they deposit their single large egg on the bare rock; and notwithstanding the multitudes of them thus mingled together, no confusion takes place; for each bird knows its own egg, and hatches it in that situation.

The sun's rays, reflected from the bare rock, doubtless aid the heat of incubation. But it has often excited surprise that the eggs are not rolled off into the sea by gales of wind, or even on being touched by the birds; and it is alleged that, if they are removed by the human hand, it is extremely difficult to replace them in their former steady situation. In accounting for this, it has been elicited that the egg is fixed to the spot on which it is first laid by a glutinous substance with which the egg is covered, and which keeps it firm in its place until the young are hatched.

In the friths and other inlets, when frequented by shoals of young herrings or other fishes, the Razor-bills may frequently be seen in great abundance, and in fine weather they are occasionally to be met with in the open seas. They associate with the guillemots and kittewakes. Among their breeding-places are St. Abbs in Berwickshire, the Bass Rock, and Fontoleugh, near Structarm.

Mr. Macgillivray says: "The Hebrides afford many such retreats, one of the most interesting of which is the little island of Berneray, called by mariners Barray Head, about ninety miles distant from the coast of Ireland on the one hand, and St. Kilda on the other, and one of a group of islets named the South Isles of Barray.

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* Alca Torda.

"In the summer of 1818, I accompanied Mr. Macneil of Petersay, and Mr. Nicolson of Barray, to these islands. Soon after landing we betook ourselves to a hut which had been cleared for our reception, and regaled ourselves with roasted mutton, wild fowl's eggs, and whisky. As our boat was rather large and heavy, it was substituted by a smaller one, belonging to the people of the island. Rowing round its eastern extremity, we came upon some high cliffs, covered with guillemots, of which about forty were killed, together with a few gulls. Passing round the island, we returned to our lodging, and in the evening I accompanied Mr. Nicolson to the summit of a ridge, on which were the remains of a rude fort, and where we had a fine view of the islands. Patches of white vapour floated on the surface of the ocean, and the summits of the cliffs were enveloped in mist. The weather had been so sultry for many weeks, that where the soil lay thin on the rocks, the herbage was scorched, the brooks and even the fountains were dried up, and, in this usually cold and wet climate, we experienced many of the disagreeable effects of a warmer region without any of its advantages. But the islanders cheered themselves with the hope of a speedy fall of rain, the sea having been unusually disturbed, although the weather had been calm, and this phenomenon, they said, invariably indicated a change.

"The island of Berneray is of an elliptical form, about a mile in length, and upwards of half a mile in breadth. It presents the appearance of a mass of rock considerably inclined, the northern side dipping into the water, and the southern exhibiting an abrupt section rising to the height of several hundred feet. On a kind of peninsula, jutting out from the face of this precipice, is a rude fort, in the form of a double wall, laid across the isthmus, and roofed with long slabs. Viewed from the sea, the rocks present an imposing spectacle, exhibiting masses of inclined, perpendicular, and projecting cliffs, smooth, largely cleft, or minutely fissured. The whole face of the precipice, to the extent of half a mile, was covered with birds which had assembled there for the purpose of breeding. Only four species were seen by me: the Guillemot, the Auk, the Puffin, and the Kittewake. These birds inhabit the cliffs, not promiscuously, but with a degree of regularity and distinctiveness which seems not a little wonderful. On the grassy summits breed the puffins, burrowing in the turf. From thence to half-way down is the space selected by the auks, while in the remaining division are stationed the guillemots and kittewakes, the latter coming almost to high-water mark."

The flight of this bird is similar to that of the guillemot; it is performed by rapid strokes of the pinions, and at a low elevation, except when endeavouring to attain the ledge of the rock on which it breeds. It is worthy of observation, that in order to reach the top of the cliffs all the short-winged diving birds make a long sweep, and gradually rise, as if incapable of a perpendicular ascent or an upward flight, even at a moderate angle. It is curious to see the rows of these birds thickly covering the shelves and ledges appropriated to incubation, their black and white wings presenting a singular contrast to the gray or dusky rock on which they assemble.

THE LITTLE AUK.*

This bird is between eight and nine inches in length; the bill is black, and the legs inclining to brown; the plumage is black and white, and in winter the front of the neck, which is black in summer, becomes whitish; the change takes place in autumn.

The Little Auk braves the inclemency of very high latitudes, and congregates, in great flocks, within the arctic circle. The inhospitable coasts of Greenland and Spitzbergen are the dwelling-places of these birds, and thousands have been seen at Melville Island. In these dreary regions they are said to watch the motions of the ice, and, when it is broken by storms, down they come in legions, crowding into every fissure, to banquet on the crustacea and other marine animals which then lie at their mercy.

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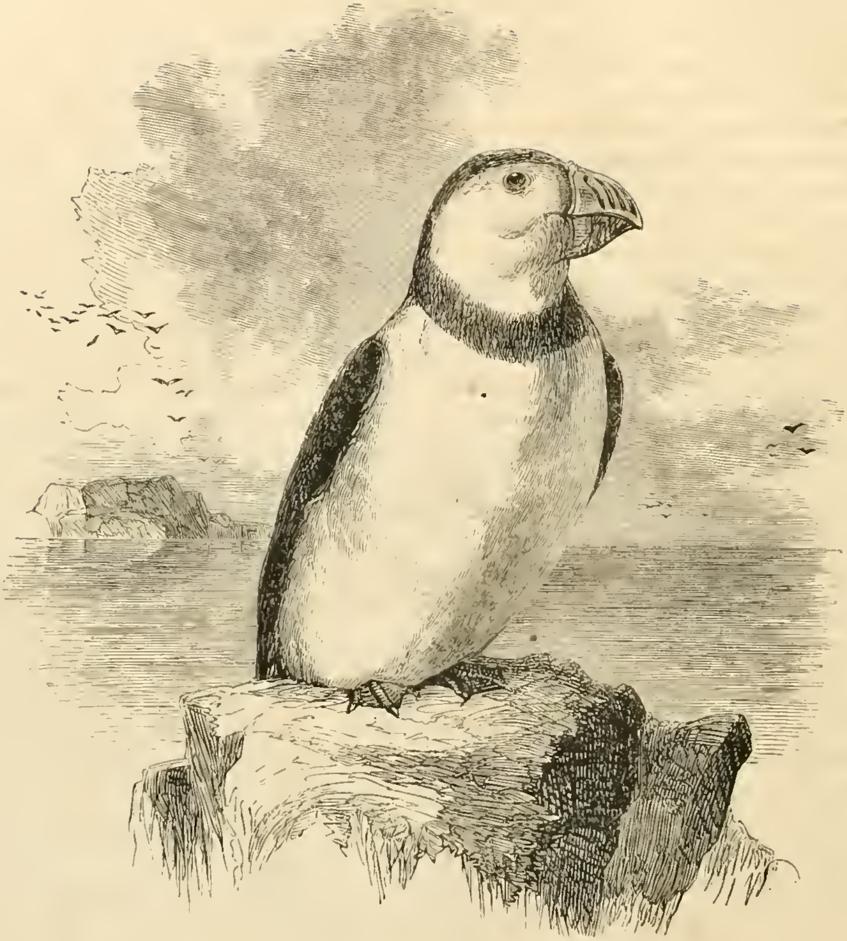
* Uria Alle.—Temm.

Captain Sabine, in his "Memoir on the Birds of Greenland," says, in reference to one of his voyages of discovery:

"This species was abundant in Baffin's Bay and Davis' Straits; and in latitude 76° was so numerous in the channels of water separating the fields of ice, that many hundreds were killed daily, and the ship's company supplied with them. The whole of the birds in the breeding season, the sexes being alike, had the under part of the neck an uniform sooty black, terminating abruptly and in an even line against the white of the belly: the young birds, which we saw in all stages from the egg, as soon as they were feathered, were marked exactly as the mature birds; but in the third week of September, when we were on our passage down the American coast, every specimen, whether old or young, was observed to be in change; and in the course of a few days the entire feathers of the throat and cheeks, and of the under part of the neck, had become white."

The Little Auk can hardly be called an occasional visitant of Britain, for those which have appeared here have been evidently exhausted birds, buffeted by storms, and driven by contrary winds far from the spot congenial to their habits.

This bird lays only one egg, of a pale bluish green, on the most inaccessible ledges of the precipices which overhang the ocean.



THE PUFFIN.*

The singular appearance of this bird, the contour of its figure, which is round, thick, and ball-like, and its peculiar physiognomy, naturally attract attention. It makes its appearance at its customary breeding-places about the middle of April, and departs in August to winter on the southern coasts of Spain, Italy, and other parts of Southern Europe. It is very numerous at the Needles in the Isle of Wight, on Priestholm Island, off the coast of Anglesea, and in other places.

The length of the bird is thirteen inches. The bill is deeply furrowed, and bluish-gray at the base, the middle part orange-red, which deepens into bright red at the tip; the legs are orange-red. Perched on the cliff of the craggy precipice, the puffin looks down with eager gaze on the sea beneath, and skilfully throws itself into the abyss. Here it expertly swims and dives; its food consisting of the smaller fishes, and especially the young of the sprat.

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* Mormon Fratercula. Ill.

Many of these birds resort to the Feroe Islands, selecting such as are covered with a stratum of vegetable mould; and here they dig their own burrows, from there not being any rabbits to dispossess upon the particular islands they frequent. They commence this operation about the first week in May, and the hole is generally excavated to the depth of three feet, often in a curving direction, and occasionally with two entrances. When engaged in digging, which is principally performed by the males, they are sometimes so intent on their work as to admit of their being taken by hand; and the same may also be done during incubation. "At this period," says Selby, "I have frequently obtained specimens by thrusting my arm into the burrow, though at the risk of receiving a severe bite from the powerful and sharp-edged bill of the old bird. At the further end of this hole the single egg is deposited, which in size nearly equals that of a pullet. The length two inches three lines, by an inch and seven lines in breadth. Its colour when first laid is white, sometimes spotted with pale cinereous, but it soon becomes soiled and dirty from its immediate contact with the earth, no materials being collected for a nest at the end of the burrow. The young are hatched after a month's incubation, and are then covered with a long blackish down above, which gradually gives place to the feathered plumage, so that, at the end of a month or five weeks, they are able to quit the burrow, and follow their parents to the open sea."

Mr. James Wilson, when at St. Kilda, says:—"The houses, or at least the front ones, form a pretty regular line. As stones are plenty in the island, the walls are of great thickness, or rather each wall is double, there being built, first of all, a couple of very strong dykes within a foot or two of each other, and then the intermediate space is crammed with earth, which fills up all the interstices, and produces a comfortable dwelling.

"The furniture, as may be supposed, is scanty enough, though much improved of late years. Each house has one or more bedsteads, with a small supply of blankets, a little dresser, a seat or two with wooden legs, and a few kitchen articles; and almost every dwelling has also a small four-paned window, which, however, admits but an inefficient light, owing to the great thickness of the walls. None that we noticed had a chimney, the smoke finding its devious way as it best can from the floor to a hole in the roof. This is trying to the eyes of strangers.

"We rested for a time in one of the houses, inhabited by a widow woman and her daughter, and found that the former had been with her dog across the hill that morning to collect her food, which, at certain seasons, is really scattered before them like manna in the wilderness. They have 'flesh rained upon them as dust, and feathered fowls like the sand of the sea.'

"Their chief sustenance at this time consisted of the small sea-fowl—the puffin. The widow had snared about a score, and having already eaten *a few* for breakfast, was now employed in boiling a corresponding number for dinner. We saw their little fat bodies turning round and round in the pot, and would have tasted one as soon as it was ready, had we not at the time been less carnivorously inclined than usual.

"These birds are caught by stretching a piece of cord along the stony places where they chiefly congregate. To this cord are fastened, at certain intervals, numerous hair nooses; and from time to time, when the countless puffins are paddling upon the surface, in go their little web feet, they get noosed round the ankle, and no sooner begin to flap and flutter, than down rushes a ruthless widow woman, and twists their necks. Her dog had acted a useful part, not only in driving more distant or otherwise inaccessible birds from their roosting-places towards the nooses, but by catching them dexterously in its mouth."

In Iceland these birds are caught by means of a hook fastened to the end of a stick; and, what is singular, when one is dragged out, his companions take hold of him, and endeavour to retain him; by which means they are often caught to the number of three or four at a time.

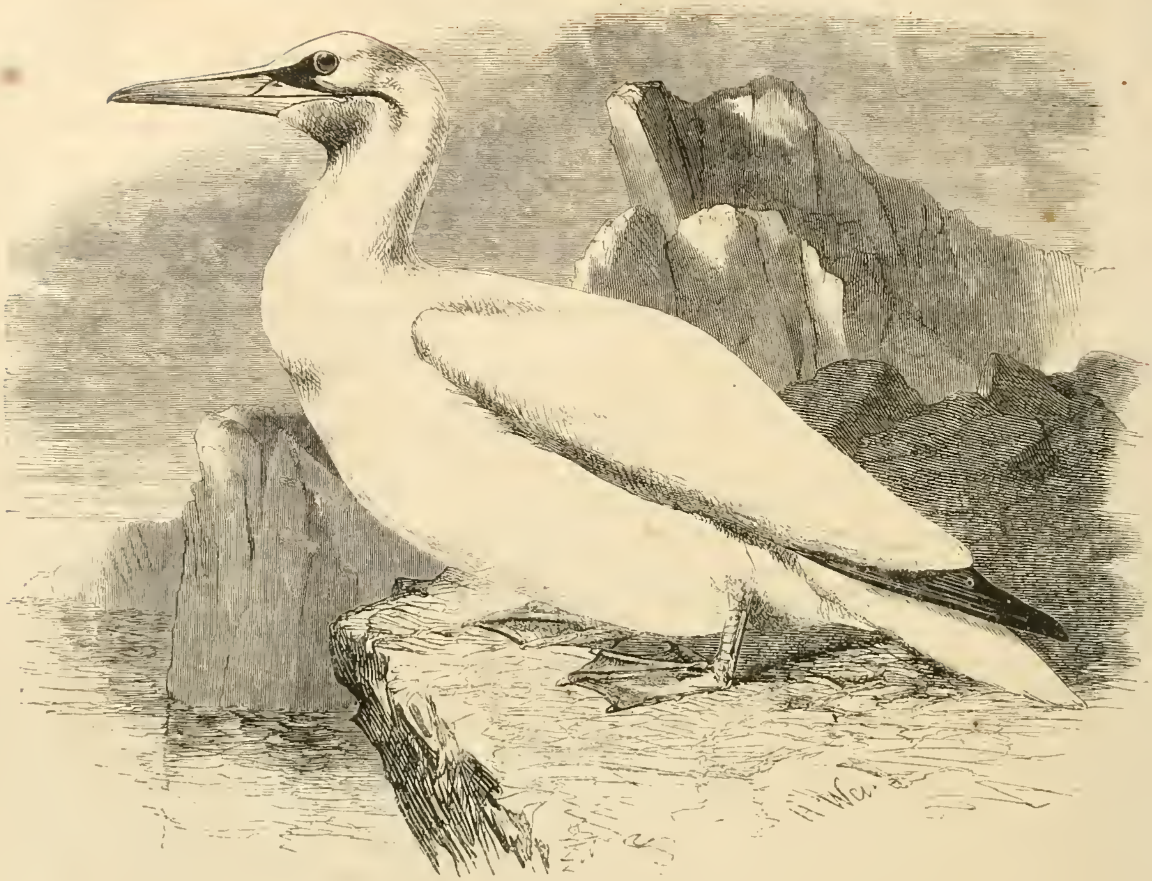
Puffins breed in great numbers on the rocks of Norway; and the mode of capturing them is exactly the same as that adopted in the northern parts of Great Britain, excepting that a dog is trained to the sport. The birds sit together in prodigious numbers in deep holes and clefts of the highest rocks, and one of these little dogs, being sent in, seizes the first by the wing. This, to prevent being carried away, lays hold, with its strong beak, of the bird next to it, which, in like manner, seizes its neighbour, and the dog continuing to draw them out, an extraordinary string of these birds falls into the hands of the fowlers. "They are taken," says Colonel Brooke, to whom we owe the story, "for their feathers, which are very valuable."

Mr. Audubon gives the following admirable account of the habits of this bird:—"There is, on the coast of Labrador, a small island, known to all the cod-fishers, and celebrated for the number of puffins that annually breed there. As we rowed towards it, although we found the water literally covered with thousands of these birds, the number that flew over and around the green island seemed much greater, insomuch that one must have imagined half the puffins in the world had assembled there.

"This far-famed island is of considerable extent; its shores are guarded by numberless blocks of rocks, and within a few yards of it the water is several fathoms in depth. The ground rises in the form of an amphitheatre to the height of about seventy feet, the greatest length being from north to south, and its southern extremity fronting the Strait of Bellisle. For every burrow in the island previously visited by us, there seemed to be a hundred here; on every crag or stone stood a puffin, at the entrance of each hole another, and yet the sea was covered and the air filled by them. I had two double-barrelled guns and two sailors to assist me, and I shot for one hour by my watch, always firing at a single bird on the wing. How many puffins I killed in that time I take the liberty of leaving you to guess. (Naughty John! Have I not heard you say, 'I hate to see birds shot when breeding?' to which the very apt reply was made, 'By any person but yourself.' See vol. ii. p. 466. But, however—). The burrows were all inhabited by young birds, of different ages and sizes; and clouds of puffins flew over our heads, each individual holding a 'lint' by the head.

"This fish, which measures four or five inches in length, and is of a very slender form, with a beautiful silvery hue, existed in vast shoals in deep water around the island. The speed with which the birds flew made the fish incline by the side of their neck. While flying, the puffins emitted a croaking noise, but they never dropped the fish; and many of them, when brought down by a shot, still held their prey fast. I observed with concern the extraordinary affection manifested by these birds towards each other; for, whenever one fell down or tumbled in the water, its mate or a stranger immediately alighted by its side, swam round it, pushed it with its bill, as if to urge it to fly or dive, and seldom would leave it until an oar was raised to knock it on the head, when, at last, aware of the danger, it would plunge below in an instant. Those which fell wounded immediately ran with speed to some hole, and dived into it, on which no further effort was made to secure them. Those which happened to be caught alive on the land bit most severely, and scratched with their claws at such a rate that we were glad to let them escape.

"The burrows here communicated in various ways with each other, so that the whole island was perforated as if by a multitude of subterraneous labyrinths, over which one could not run without the risk of falling at every step. The voices of the young sounded beneath our feet like voices from the grave, and the stench was extremely disagreeable, so that as soon as our boats were filled with birds, we were glad to get away. During the whole of our visit the birds never left the place, but constantly attended to their avocations. Here one would rise beneath our feet; then, within a few yards of us, another would alight with a fish, and dive into its burrow, or feed the young that stood waiting at the entrance. The young birds were far from being friendly to each other, and those which we carried with us kept constantly fighting so long as we kept them alive. They used their yet extremely small bills with great courage and pertinacity, and their cries resembled the wailings of young whelps. The smaller individuals were fed by the parents by regurgitation, or received little pieces of fish which were placed in their mouths; the larger picked up the pieces of fish which were dropped before them; but almost all of them seemed to crawl to the entrance of the holes for the purpose of being fed. In all the burrows that communicated with others, a round place was scooped out on one side of the avenue, in the form of an oven, while in those which were single, this oven-like place was formed at the end, and was larger than the corridor. All the passages were flattish above, and rounded beneath as well as on the sides. In many instances we found two birds sitting, each on its own egg, in the same hole."



THE GANNET.*

There is one spot which, in connexion with these birds, is entitled to particular notice. Old Hector Boece, speaking of the Bass Rock as it appeared in the sixteenth century, says: "It is ane wounderful crag, risand within the sea, with so narrow and strait hals for passage, that na schip nor boit may arrive, bot all arneslic at ane part of it. This crag is callet the Bas; unwinnabill by ingine of man. In it are coves, als profitable for defence of men, as (if) thay were biggit be crafty industry. Every thing that is in that crag is full of admiration and wonder." None of the remarkable features of the Bass Rock have since been lost. "Rising abruptly to the height of four hundred and twenty feet above the level of the sea, about two miles from the shore, and three miles east from the ancient royal burgh of North Berwick, it presents to the stranger," says the Rev. T. Mc Crie, "one of the most striking objects on entering the mouth of the Firth; and to the visitor in summer, when the dark-broad rock is encircled with myriads of sea-fowl, whirling around in all varieties of plumage, and screaming in all the notes of the aquatic scale, when it may be said,—

'The Isle is full of noises,
Sounds, and *wild* airs, that give delight and hurt not,'

the scene appears like enchantment, and leaves an impression not easily forgotten."

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* Sula Bassana.

The celebrated discoverer of the circulation of the blood, William Harvey, thus alludes to the Bass Rock: "The surface of this island, in the months of May and June, is almost covered with nests, eggs, and young birds, so that you can scarce find free footing anywhere; and then such is the density of the flight of the old birds above, that, like a cloud, they darken the sun and sky; and such is the screaming and din, that you can scarce hear the voice of one that addresses you.

"If you turn your eyes below, and from your lofty stand and precipice regard the sea, there you perceive on all sides around an infinite variety of different kinds of sea-fowl swimming about in pursuit of their prey: the face of the ocean is very like that of a pool in the spring season, when it appears swarming with frogs; or to those sunny hills and cliffy mountains, looked at from below, that are covered with numerous flocks of sheep and goats.

"If you sail round the island and look up, you see on every ledge, and shelf, and recess, innumerable flocks of birds of almost every size and order—more numerous than the stars that appear in the unclouded, moonless sky; and if you regard the flights that incessantly come and go, you may imagine it is a mighty swarm of bees that you have before you. I should scarcely be credited did I name the revenue which was annually derived from the feathers, the eggs, and the old nests; which, as useful for firing, are all made objects of traffic by the proprietor: the sum he mentions exceeds credibility.

"There was this particular feature, which, as it refers to our subject, I shall mention, and also as it bears me out in my report of the multitudes of sea-fowl; the whole island appears of a brilliant white colour to those who approach it; all the cliffs look as if they consisted of the whitest chalk; the true colour of the rock, however, is dusky and black. It is a friable white crust that is spread over all, which gives the island its whiteness and splendour—a crust, having the same consistency, colour, and nature of an egg-shell, which plasters everything with a hard, though friable, and testaceous kind of covering."

For other particulars we are indebted to more recent naturalists. When, for the first time, the Bass Rock was visited by one entitled to great honour, Mr. Macgillivray, the number of the gannet might be estimated, he thought, at twenty thousand. Every part of the mural faces of the rock, especially towards their summits, was, more or less, covered by them. In one spot, near the landing-place, about forty yards in circumference, and on a gentle slope of gravelly ground, about three hundred individuals were seated in peaceful security in their nests.

These birds arrive in February or the beginning of March, and depart in October. In some years a few individuals remain during the winter. The nests are composed of grass and sea-weeds, generally placed on the bare rock or earth, elevated in the form of a truncated cone, of which the base is about twenty inches in diameter, with a shallow terminal cavity. On the summit of the island are numerous holes in the turf, formed by the gannets in pulling away grass and turf for their nests. They are placed in all parts of the rock where a convenient spot occurs, but are much more numerous towards the summit.

The gannets, while sitting, usually allow a person to approach within three feet, sometimes much nearer, so that one may even touch them. At such times they merely open their bill and make their usual cry, or, rising on their feet, they express some degree of resentment, but seem to have very little apprehension of danger. They take advantage of the absence of their neighbours to pilfer the materials of their nests; frequently two join in the act, and occasionally two may be seen tugging at the same bunch, endeavouring to wrest it from each other. The female lays only one egg. During incubation, these birds, in consequence of being unmolested, become very tame; and when they are easily accessible on the flat surface of the south-west side of the Bass Rock, they will allow themselves to be stroked by the hand without resistance, or any show of impatience except the low guttural cry of *grog, grog.*

It appears that the gannet is a long-lived bird, certain individuals having been recognised, from particular and well-known marks, as returning for upwards of forty years to the same spot to breed.

The young are at first covered with very beautiful snow-white close down; at the age of about six weeks the feathers make their appearance, and at the end of three months they are ready to fly. The gannet is valued for its flesh, though rank and oily, and for the down which forms its clothing. Thousands of these birds are sold, at the rate of one shilling and eight pence each, in the markets of Edinburgh and other towns of Scotland. Hence the Bass Rock is rented from the proprietor at an annual charge, and the proceeds of the rentor depend on the produce of the birds.

At St. Kilda alone, more than 22,000 birds and an immense quantity of eggs are said to be annually consumed. Latham considers 100,000 far too low an estimate. They are also found on the Skelig Isles, on the Irish coast.

The late Dr. Stanley, Bishop of Norwich, vouched for the fact of sea-birds feeding on fish forced above the surface by the lower part of the shoal, having witnessed a singular scene off the Hebrides during the summer season:—"A whale of the smaller species (*Delphinus deductor**) was observed pursuing a shoal of herrings about half a mile off. The fish were evidently in a state of alarm, and it was equally evident that a prodigious flight of gulls, gannets, and all the host of sea-birds, were aware of what might happen, as they hovered over the spot screaming, and now and then darting irregularly downwards to within a yard or two of the surface. As the whale closed upon the shoal, agitation seemed to increase, judging by the increased excitement of the birds above. His long black back slowly rose, and disappeared as the huge animal rolled onwards, seldom descending so far below as to bury his back-fin, which rippled along the surface: at length he was in the midst of them, and the confusion was complete. At one moment he disappeared altogether; but, though unseen by us, it was very clear, by a momentary elevation of an actual mass of herrings above the water, that the poor frightened creatures had closed within the smallest compass, and by the upheaving struggles of the lower stratum of the shoal, were thus unwillingly exposed to greater dangers in another element; for, availing themselves of this eventful moment, down came the birds with one simultaneous pounce upon the dense mass. Shortly after, the dark fin would again appear, and a bright jet of glistening foam, rising like a fountain, announced that the animal was under the necessity of breathing or blowing after his labours. Then again he would descend headlong, with a sort of recruited spring, exhibiting nearly his whole body, and giving the water a tremendous lash with his tail as it disappeared. The sound produced by this crash upon the waves was astounding enough in itself, but the effect of the blow was far more so; for, whether by a sort of sculling motion it scooped and threw a mass of herrings upwards with a jerk, or whether they were fairly driven from the water with the cloud of foam which followed the blow, the air for some feet above the water was spangled with bright specks of herring, on which the united host of birds again pounced, forming one mingled mass of herrings, sea-fowl, and foam."

In reference to the people of St. Kilda, Mr. James Wilson says:—"They pay their rent (about £60, as we were told) chiefly by means of feathers, which they collect from both the young and old birds, and each family is also bound to furnish about twenty-three pecks of barley every year. This, however, I believe, is made up by an additional supply of feathers: of these the quantity which the *nation* must furnish is 240 stone, each family contributing what it can to the general stock, which is laid up for the proprietor, or rather his tenant, in the slated storehouse near the shore. In their proceedings they thus literally realise a supposed poetical conversion:—

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* The northern coasts were much frequented by this whale about that time; at Kirkwall Bay, in Orkney, we saw the remains of no less than ninety-two, which had been recently driven on shore in a heavy gale.

> 'And though the rocky-crested summits frown,
> These rocks by custom turn to beds of down.'

We were certainly at first surprised that there should have been so few of the middle-aged and stouter class of men to witness if not to welcome our arrival. But this was soon accounted for by the fact, that, about ten days previous, a principal portion of the male population had proceeded to the neighbouring island of Borrera, and a steep rock near it, to collect; and *the* boat (they have only one) had gone off with a crew that morning to bring these adventurers home. They arrived while we were still in the island,—nineteen stout men and lads, the crew included,—and we had an opportunity of inspecting their harvest. The large boat was half-filled with huge bundles of feathers, and besides these were a great number of smaller bundles of dark red rather repulsive-looking fleshy things, which we found to consist of the hind-legs and backs of birds, chiefly young solans."

He adds to this statement:—"We have already mentioned the 240 stone of feathers as a general contribution, and the twenty-three pecks of barley payable by each of the families (about a score in number), which have allotments of arable land,—the two combined forming the rent of the island, or at least its principal portion. For this they have their houses and plots of ground, the right of course of catching the birds, plucking and storing their feathers, and eating their eggs and flesh,—and the further privilege of grazing (each family) ten sheep upon the hill-pastures, and the right of cutting or rather pairing turf. Two or three small horses still exist upon the island (originally imported to carry turf), but they are found to be of no use, and therefore no charge is made for their pasture, and we believe the people would willingly part with them to any person who would carry them away. So whoever desires a cheap horse, we recommend him to proceed forthwith to St. Kilda.

"The great product of St. Kilda is feathers, collected, as we have said, by the general population, every working man doing what he can to fill the boat during each excursion to the rocks or neighbouring islands, until the requisite supply has been obtained and stored away. In this way old age and sickness are of no disadvantage to the individual beyond the physical sufferings which they may entail; for his house, grazing, and fuel privileges belong to him as a member of the community, and the feathers are collected by the able-bodied, who also distribute a due proportion of the general stock of solan goose flesh, fulmars, and other delicacies, to the feeble or inefficient. Of course your widow woman and others who have no husbands to work for the general benefit, are expected when in health to do what they can to contribute in some measure to their own support, by snaring puffins and other poultry at their convenience; but no one who is really unable to work need fear want, as he is sure of his share from the general stock. What a blessed change would it be for the poor of other places (wealthy, liberal, and enlightened), if a similar system were pursued! So let our philanthropists think of these things.

> 'But, oh, o'er all, forget not Kilda's race,
> On whose bleak rocks, which brave the wasting tides,
> Fair Nature's daughter, Virtue, yet abides.
> Go, just as they, their blameless manners trace!
> Then to mine ear transmit some gentle song,
> Of those whose lives are yet sincere and plain,
> Their bounded walks the rugged cliffs along,
> And all their prospect but the wintry main.

With sparing temperance at the needful time
They drain the scented spring; or, hunger-prest,
Along the Atlantic rock undreading climb,
And of its eggs despoil the solan's nest.
Thus blest in primal innocence they live,
Sufficed and happy with that frugal fare,
Which tasteful toil and hourly danger give.
Hard is their shallow soil, and bleak and bare;
Nor ever vernal bee was heard to murmur there.' " *

The following vivid sketch is from the pen of the same writer:—" While bearing towards the appointed place of rendezvous in the cutter, we enjoyed some splendid tacking off and on the island, beholding from various points its vast and wave-worn caverns filled with the murmuring sea—its deep, dark, rocky battlements—and, over all, the cloud-capped summits of the hoary Connagher, the highest mountain of St. Kilda. As we approached a stupendous precipice we could see the people perched like jackdaws along its edge, and that we might be as near as possible to the scene of action, we got into the small-boat, and rowed (minister and all) towards the mural shore. It was almost fearful to behold it hanging in such huge and ponderous masses overhead:—

'Cliffs of darkness, caves of wonder,
Echoing the Atlantic's thunder!'

"We then stood still upon our oars, and the minister rose and waved his hat. Suddenly we could hear in the air above us a faint huzzaing sound, and at the same instant three or four men, from different parts of the cliff, threw themselves into the air, and darted some distance downwards, just as spiders drop from the top of a wall. They then swung and capered along the face of the precipice, bounding off at intervals by striking their feet against it, and springing from side to side with as much fearless ease and agility as if they were so many schoolboys exercising in a swing a few feet over a soft and balmy clover-field. Now they were, probably, not less than 700 feet above the sea, and the cliff was not only perpendicular in its upper portion, but as it descended it curved backwards as it were, forming a huge rugged hollow portion, eaten into by the angry lashing of the almost ceaseless waves. In this manner, shouting and dancing, they descended a long way towards us, though still suspended at a vast height in the air, for it would probably have taken all their cordage joined together to have reached the sea. A great mass of the central portion of the precipice was smoother than the wall of a well-built house, and it was this portion especially which was not only perpendicular but had its basement arched inwards into an enormous wave-worn grotto, so that any one falling from the summit would drop at once sheer into the sea.

"It was on this the smoother portion of the perpendicular mountain that one or two of the cragsmen chiefly displayed their extraordinary powers, because, as there was nothing to interrupt either the rapid descent of the rope, or its lateral movement, or their own outward bounds, we could see them sometimes swinging to and fro after the manner of a pendulum, or dancing in the air with a convulsive motion of the legs and arms (presenting a painful resemblance to men hanging in the agonies of death), or tripping a more light fantastic toe by means of a rapid and vigorous action of the feet against the perpendicular surface of the rock. These men merely capered for our amusement, but caught no birds; for such was in fact the adamantine smoothness of the surface, that not even a winged inhabitant of the air could have found rest for the sole of its foot. But on either side the precipice, though equally steep, was more rugged, and there we could perceive that the cragsmen, having each a rope securely looped beneath his arms, rested occasionally upon his toes, or even crawled, with a spider-like motion, along projecting

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* Collins' "Ode on the Popular Superstitions of the Highlands."

ledges, and ever and anon we could see them waving a small white fluttering object, which we might have taken for a pocket-handkerchief, had we not been told it was a feathery fulmar. They twisted their necks, then looped their heads into a little noose or bight of the rope above them, and by the time the men were drawn again to the top of the rock, each carried up a good bundle of birds along with him. Their object, however, was not to collect, but merely to give us a specimen of their mode of doing so, and they would have reaped a much richer harvest had they proceeded to actual business. But to see them dangling in the air, like spiders from webs of gossamer, the ropes being scarcely visible, owing to the great height from which they were suspended, was in truth a surprising sight. How one man (for such is the case), himself standing with the points of his toes upon the very verge of a precipice, many hundred feet deep, can with such secure and unerring strength sustain the entire weight of another man bounding from point to point below him with irregular and frequent springs, is what a stranger cannot understand, and could scarcely credit without the 'ocular proof.' But we ascertained that there is never more than a single man above, supporting the weight of the one below. Each of these couples has as it were two ropes between them. The rope which the upper man holds in his *hands* is fastened round the body and beneath the arms of him who descends, while another rope is pressed by the *foot* of the upper man, and is held in the hand of the lower. One would think that this kind of cross-working would be apt to pull the upper partner from the top of the cliff, and that both would be speedily dashed to pieces or drowned among the roaring rocks below; but it is said that scarcely more than one or two accidents have happened within the memory of the present generation.

"Not a native of the island can swim—a fact which at first surprised us; but, on reflection, it is evident that when any unfortunate catastrophe does take place, no human strength nor skill in any art can save them from destruction. After thus showing off for a sufficient length of time, the rope-dancers were hauled to the top, and made their way upwards almost as rapidly as they had descended. We could then also perceive more clearly the uses of the two ropes; for while the man above drew up one of them, hand over hand, as sailors say (just as in sea-fishing you would draw up a cod or conger-eel at the end of a line), the man below aided his own ascent by hauling also hand over hand upon the other, which was held by the tenacious foot of his assistant in the higher regions."

Other details of great and even thrilling interest are thus given by the late Dr. Stanley: "Their great dependence is upon ropes of two sorts; one made of hides,—the other, of hair of cows' tails, all of the same thickness. The former are the most ancient, and still continue in the greatest esteem, as being stronger and less liable to wear away or be cut by rubbing against the sharp edges of rocks. These ropes are of various lengths, from ninety to a hundred and twenty, and nearly two hundred feet in length, and about three inches in circumference. Those of hide are made of cows' and sheep's hides mixed together. The hide of the sheep, after being cut into narrow slips, is platted over with a broader slip of cow's hide. Two of these are then twisted together; so that the rope, when untwisted, is found to consist of two parts, and each of these contains a length of sheep-skin covered with cow's hide. For the best, they will ask about thirteen pence a fathom, at which price they sell them to each other.

"So valuable are these ropes, that one of them forms the marriage portion of a St. Kilda girl, and, to this secluded people, to whom monied wealth is little known, is an article, on which often life itself, and all its comforts, more or less depends, far beyond gold and jewels.

"The favourite resort for sea-fowl, particularly the oily Fulmars, is a tremendous precipice, about thirteen hundred feet high, formed by the abrupt termination of

Conachan, the most elevated hill in the island, and supposed to be the loftiest precipitous face of rock in Britain.

> 'How fearful
> And dizzy 'tis to cast one's eyes so low!
> And Crows and Choughs, that wing the midway air,
> Show scarce so gross as beetles; halfway down
> Hangs one that gathers samphire—dreadful trade!
> Methinks he seems no bigger than his head;
> The fishermen that walk upon the beach
> Appear like mice; and yon tall anchoring bark,
> Diminished to her cock; her cock, a buoy,
> Almost too small for sight: the murmuring surge,
> That on the unnumbered idle pebbles chafes,
> Cannot be heard so high. I'll look no more;
> Lest my brain turn, and the deficient sight
> Topple down headlong.'

"Such is the beautiful description of Dover Cliff, by Shakspeare; but what would he have said, could he have looked down from this precipice in St. Kilda, which is nearly three times higher, and so tremendous, that one who was accustomed to regard such sights with indifference, dared not venture to the edge of it alone? but, held by two of the islanders, he looked over into what might be termed a world of rolling mists and contending clouds. As these occasionally broke and dispersed, the ocean was disclosed below, but at so great a depth, that even the roaring of its surf, dashing with fury against the rocks, and rushing, with a noise like thunder, into the caverns it had formed, was unheard at this stupendous height. The brink was wet and slippery—the rocks perpendicular from their summit to their base; and yet, upon this treacherous surface, the St. Kilda people approached, and sat upon the extremest verge; the youngest of them even creeping down a little way from the top, after eggs or birds building in the higher range, which they take in great numbers, by means of a slender pole like a fishing-rod, at the end of which was fixed a noose of cow-hair, stiffened at one end with the feather of a solan goose.

"But these pranks of the young are nothing when compared to the fearful feats of the older and more experienced practitioners. Several ropes of hide and hair are first tied together to increase the depth of his descent. One extremity of these ropes, so connected, is of hide, and the end is fastened, like a girdle, round his waist. The other extremity is then let down the precipice, to a considerable depth, by the adventurer himself, standing at the edge; when, giving the middle of the rope to a single man, he descends, always holding by one part of the rope, as he lets himself down by the other, and supported from falling only by the man above, who has no part of the rope fastened to him, but holds it merely in his hands, and sometimes supports his comrade by one hand alone, looking at the same time over the precipice, without any stay for his feet, and conversing with the other, as he descends to a depth of nearly four hundred feet. A bird-catcher, on finding himself amongst the fulmars' nests, took four, and with two in each hand contrived, nevertheless, to hold the rope as he ascended; and, striking his foot against the rock, threw himself out from the face of the precipice, and returning with a bound, would again fly out, capering and shouting, and playing all sorts of tricks. Frightful as such a display must be to those unaccustomed to it, accidents are extremely rare; and the St. Kildians seem to think the possibility of a fatal termination to these exploits almost out of the question.

"It is, indeed, astonishing to what a degree habit and practice, with steady nerves, may remove danger. From the island of the South Stack, boys may be seen frequently scrambling by themselves, or held on by an urchin or two of their own age, letting themselves down the picturesque precipice opposite the island, by a piece of rope so slender, and apparently rotten, that the wonder is why it does not snap at the first strain. Yet, without a particle of fear, heedless of consequences, they will swing themselves to a ledge barely wide enough to admit the foot of a goat, and thence pick their way with or without the rope, to pillage the nest of a gull, which, if aware of its own powers, might flap them headlong to the bottom.

" Here too, as in St. Kilda, accidents are said to be of rare occurrence, though, of course, they do occasionally happen ; but escapes, sufficiently appalling to make the blood run cold to hear of, are common enough.

" The first we shall mention happened about two miles from the South Stack, on the rocky coast of Rhoscolin. A lady, living near the spot, sent a boy in search of samphire, with a trusty servant to hold the rope at the top. While the boy was dangling midway between sky and water, the servant, who was unused to his situation, whether owing to a sudden dizziness from looking downward on the boy's motions, or misgivings as to his own powers of holding him up, felt a cold, sickly shivering creep over him, accompanied with a certainty that he was about to faint ; the inevitable consequence of which, he had sense enough left to know, would be the certain death of the boy, and, in all probability, of himself, as, in the act of fainting, it was most likely he would fall forward, and follow the rope and boy down the precipice. In this dilemma, he uttered a loud despairing scream, which was fortunately heard by a woman working in an adjoining field, who, running up, was just in time to catch the rope as the fainting man fell senseless at her feet.

" We shall add two more, equally hazardous,—and one fatal. Many bird-catchers go on these expeditions without any companion to hold the rope or assist them. It was on such a solitary excursion that a man, having fastened his rope to a stake on the top, let himself down far below ; and, in his ardour for collecting birds and eggs, followed the course of a ledge, beneath a mass of overhanging rock ; unfortunately he had omitted to take the usual precaution of tying the rope round his body, but held it carelessly in his hand ; when, in a luckless moment, as he was busily engaged in pillaging a nest, it slipped from his grasp, and, after swinging backwards and forwards three or four times, without coming within reach, at last became stationary over the ledge of the projecting rock, leaving the bird-catcher apparently without a chance of escape ; for to ascend the precipice without a rope was impossible, and none were near to hear his cries or afford him help. What was to be done ? Death stared him in the face. After a few minutes' pause, he made up his mind. By a desperate leap he might regain the rope ; but if he failed, and, at the distance at which it hung, the chances were against him, his fate was certain, amidst the pointed crags ready to receive him, over which the waves were dashing far, far below. Collecting, therefore, all his strength, with outstretched arms, he sprang from the rock, and lived to tell the tale—for the rope was caught !

" The next occurred at St. Kilda, where, amongst other modes of catching the sea-fowl, that of setting gins or nooses is adopted. They are fixed in various places frequented by the birds. In one of these, set upon a ledge, a hundred and twenty feet above the sea, a bird-catcher entangled his foot, and not being at the moment aware of it, was, on moving onwards, tripped up, and precipitated over the rock, where he hung suspended. He, too, as in the preceding case, had no companion ; and, to add to his misfortune, darkness was at hand, leaving little prospect of his being discovered before morning. In vain he exerted himself to bend upwards, so as to reach the noose or grapple the rock. After a few fruitless efforts, his strength was exhausted, and in this dreadful situation, expecting, moreover, that the noose might give way every instant, did he pass a long night. At early dawn, by good fortune, his shouts were heard by a neighbour, who rescued him from his perilous suspension.

" The last we shall relate terminated in a more awful manner. A father and two sons were out together, and, having firmly attached their rope at the summit of a precipice, descended, on their usual occupation. Having collected as many birds and eggs as they could carry, they were all three ascending by the rope,—the eldest of the sons first,—his brother, a fathom or two below him,—and the father following last. They had made considerable progress, when the elder son, looking upwards, perceived the strands of the rope grinding against a sharp edge of rock, and gradually giving way. He immediately reported the alarming fact. 'Will it hold together till we can gain the summit?' asked the father. 'It will not hold another minute,' was the reply; 'our triple weight is loosening it rapidly!' 'Will it hold one?' said the father. 'It is as much as it can do,' replied the son; 'even that is but doubtful.' 'There is then a chance, at least, of one of us being saved; draw your knife, and cut away below!' was the cool and intrepid order of the parent; 'Exert yourself,—you may yet escape, and live to comfort your mother!' There was no time for discussion or further hesitation. The son looked up once more, but the edge of rock was cutting its way, and the rope had nearly severed. The knife was drawn,—the rope was divided,—and his father and brother were launched into eternity!"

THE PENGUINS.

The Penguins constitute a group of oceanic birds peculiar to the Southern Ocean. They are not intertropical, but range from the frigid to the temperate latitudes south of the tropic of Capricorn, and in these seas take place of the Auks, and especially of the Great Auk of the Northern Ocean.

Adapted in their structure not for the land, on which they are constrained and awkward, nor for the air, into whose regions Nature has forbidden them to arise, but for the watery element, in which, like the seal, they are completely at home, they present in the peculiarities of their organisation a subject of the highest interest.

As the limbs of the seal are converted into paddles, in order to fit it for its destined mode of life and the successful chase of its finny prey, so the limbs of the penguins are converted into aquatic organs, in order that they may propel these tenants of the deep through the yielding water. And as the modified structure of one organ requires a corresponding modification of another, so the conversion of the wings into aquatic paddles in the case of the penguins, which can manifestly only be used with effect as the body is submerged to a certain depth, so do they exhibit a correspondence in the weight, the figure, and the clothing of the body, in the structure of the skeleton, and in the very texture of the bones.

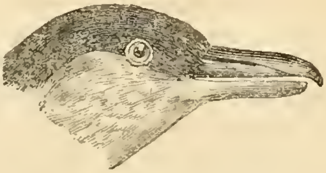
The weight of the body itself is specifically greater than in other birds. Were the penguin, with its shape unaltered, specifically as light as the swallow or the tern, it would float like a cork ; diving would be a laborious task, and its paddle-like wings—incapable of being used except while the body is submerged—comparatively useless. Hence we find it, in all respects, adapted to its circumstances.

Its weight is such as to sink the bird almost to the head in the water, and consequently such as incapacitates it for flight, even were its wings formed as in aerial birds. Instead, therefore, of having a light skeleton, consisting of hollow air-filled bones, with their walls, the penguin has a dense, heavy, firmly-knit, osseous fabric. All the bones are compact and dense ; they have no aperture for the admission of air ; and the slight degree of hollowness of those of the limbs is filled with thick oily marrow. The skin is thick and oily ; the muscles are darker-coloured and heavy. Still further ; the large air-cells, so conspicuous in the cavities of the chest and abdomen of aerial birds, and which are connected with the lungs, are here not only few in number, but of small extent. In many birds these air-cells are carried out even between the skin and the muscles, not only on the body, but even along the limbs, so that the whole system is, as it were, inflated; but in the penguin this admirable structure, not being needed, is wanting.

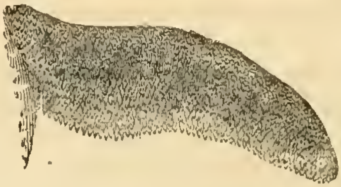
Nor is it only in the weight of its frame that the penguin shows its adaptation to the watery, and not to the aerial element ; for its figure, its clothing, and the organisation and place of its limbs, indicate its destiny with equal clearness. Thus the body is compressed and boat-shaped, of an elongated form, covered with a dense, waterproof covering of silky feathers, closely compacted together, so that the whole presents a smooth and glossy surface. The vest of feathers, thus modified, is closely pressed to the skin.

In some of the water-birds the limbs seem, like the hinder flappers of the seal, to terminate the body, and are, moreover, modified with efficient paddles. But in the penguin the situation of the legs is so posterior, that, in order to maintain its balance when on shore, the bird is obliged to stand upright, and to hobble along in this singular attitude. A flock of these birds, standing in array on the sea-shore, has a novel and very remarkable appearance; for, being collected in long ranks, they resemble a marshalled body of soldiers. The tarsi are very short and strong; the toes are three in number, united by intervening webs, besides an inner toe in a rudimentary condition, directed backwards.

The feet of the penguin serve not only as paddles, but to some extent as a rudder; for the tail is very small, and in some species reduced to the minimum of development. Its chief organs of aquatic progression are, however, its paddle-like wings. In the great auk the wings are also paddles, but they are less completely so, inasmuch as the usual feathers of these organs are to be made out, though they are extremely short and small. In the penguin, on the contrary, the paddles are always covered with layers of small, rigid, scale-like feathers, lying as close as possible, and forming a thin but compact covering to the skin.



HEAD OF PENGUIN.



WING OF PENGUIN.

Comparing these organs with the wings of birds capable of flight, it will at once be seen that, to some extent, they may be regarded as rudimentary: they are contracted in their expanse, and are broad in proportion to their length. Having to resist the pressure of a denser medium than the air, their bones are short, thick, solid, and firmly knit together: they cannot be folded up as in other birds, but when not in use hang down on each side; they are moved by vigorous muscles.

THE CRESTED PENGUIN.*

Among the oceanic birds which make the island of Tristan da Cunha their resort, both as a resting-place and a nursery in which to rear their young, one of the most remarkable is the Crested Penguin. It conceals itself, according to Captain Carmichael, among the low grass, and on the bottoms of the ravines where they open upon the shore. Here they assemble in countless multitudes, and keep up a moaning noise, which can be heard at a great distance, and which, combined with the roar of the surge re-echoed from the mountain, and the bold inhospitable coast around, is calculated to excite a train of by no means pleasant ideas. As the head only appears above the water, this gives it a peculiar facility of diving and pursuing its prey under water. For the same purpose, perhaps, its eyes appear to be uncommonly sensitive to the stimulus of light. In every bird Captain Carmichael had the opportunity of studying, the pupil was contracted to a mere dot.

The aquatic activity of this bird has led to its being called by the English, the *jumping* or *hopping* penguin; and it bears a similar appellation among the French. Though abundant in the island of Tristan da Cunha, it is not confined exclusively to that spot, but inhabits the Falkland Isles, Van Diemen's Land, and some parts of the shores of New Holland. In the water they surmount any obstacle as they swim about—leaping over it as a fish does, out of the water—a feat which they perform with the utmost ease. Nor is it always to clear any impediment in their course that these leaps are taken, but often apparently from mere playfulness, or in order to quicken their progress.

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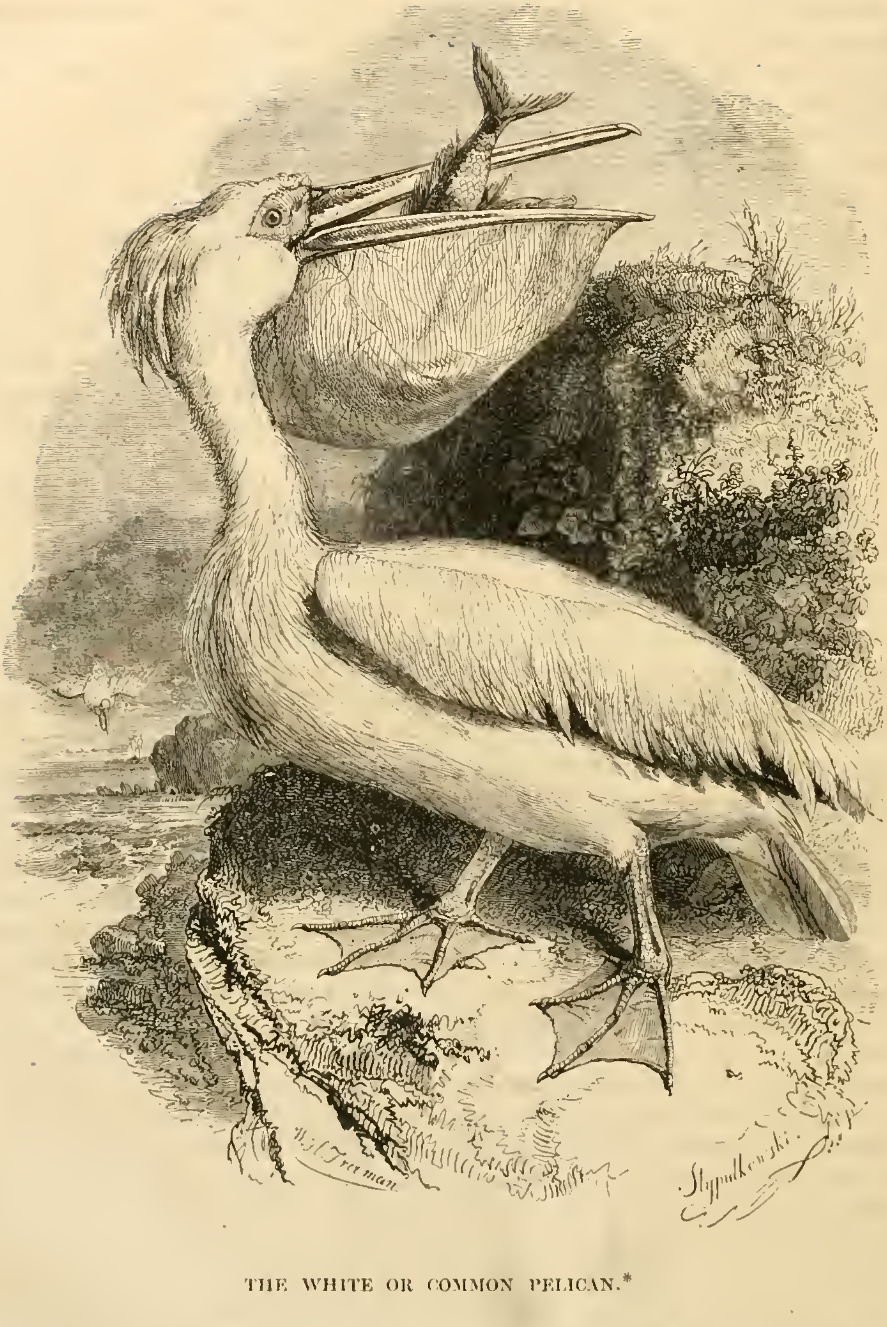
* Aptenodytes chrysocome.—Lath.

This species seems to have a greater air of liveliness in its countenance than almost any of the other penguins. Yet it has no remarkable sagacity, as it is so regardless of its own safety that it will suffer any person to lay hold of it. When provoked, it erects its crest in a very beautiful manner; and when attacked by some of our voyagers, it ran at them in flocks, pecked their legs, and spoiled their clothes. The sleep of these birds is very profound, and they are exceedingly tenacious of life. They form their nests among those of the other large sea-fowls, making holes in the earth with their bills, and throwing back the dirt with their feet. They are often found in great numbers on the shores where they have been bred. The female generally lays only a single egg.



THE WHITE OR COMMON PELICAN.*

This bird became familiar to the elders of the present generation, in collections of animals which preceded those which now afford such superior advantages. The showman was then accustomed to astonish his visitors by placing his head under the large membrane or bag of the lower mandible, and then drawing it over that part of his body like a cap. To this exhibition he added some of the wonderful stories which are popularly associated with the history of the pelican, and which were once as attractive to writers on ornithology and to the poets as they were to the most credulous and uninstructed. Happily, these have given place to spectacles more accordant with increasing intelligence, and to accounts derived from faithful observation.

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* Pelicanus Onocrotalus.

The pelicans are large and heavy birds, with a great extent of wing: they are excellent swimmers. The expansive pouch will hold a considerable quantity of fish, and thus enables the bird to dispose of the superfluous quantity which may be taken during its fishing expeditions, either for its own consumption or the support of its young.

Pelicans are residents on the banks of rivers and lakes, and on the sea-coasts: they habitually feed on fish, though they sometimes devour small quadrupeds and reptiles: they are capable of rapid flight, and have an extraordinary power of rising on high. When they perceive from an elevated position a fish or fishes on the surface of the water, they dart down with inconceivable rapidity, and, flapping their large wings so as to stun their prey, fill their pouches, and then retire to the shore to satisfy their voracious appetite. The fish thus carried away in the pouch undergo a sort of maceration before they are received into the stomach; and this grinding process renders the food fit for the young birds.

The male is said to supply the wants of the female in the same manner as the parent birds make provision for the nestlings. The under mandible is pressed against the neck and breast to assist the bird in disgorging the contents of its capacious pouch; and during this action the red nail with which the upper mandible is provided appears to come in contact with the breast. This singular process probably laid the foundation for the fable of the pelican nourishing her young with her blood, and for the attitude adopted by painters in portraying the bird with the blood spirting from the wounds made by the terminating nail of the upper mandible into the gaping mouths of her offspring.

Pelicans are rarely seen further than twenty leagues from the land. They appear to be, to a certain extent, gregarious. Le Vaillant, on his visit to Dassew Eyland, at the entrance of Saldanha Bay, witnessed an extraordinary spectacle:—"All of a sudden, there arose from the whole surface of the island an impenetrable cloud, which formed, at the distance of forty feet above our heads, an immense canopy, or rather a sky, composed of birds of every species and of all colours: cormorants, sea-gulls, sea-swallows, pelicans, and, I believe, the whole winged tribe of this part of Africa, were here assembled. All their voices, mixed together and modified according to their different kinds, formed such a horrid music, that I was every moment obliged to cover my head to give a little relief to my ears.

"The alarm which we spread was so much the more general among these innumerable legions of birds as we principally disturbed the females which were then sitting. They had nests, eggs, and young to defend: they were like furious harpies let loose against us, and their cries rendered us almost deaf. They often flew so near us that they flapped their wings in our faces; and though we fired our pieces repeatedly, we were not able to frighten them: it seemed almost impossible to disperse this cloud. We could not move one step without crushing either their eggs or their young ones; the earth was entirely strewed with them." Le Vaillant found on the Klein-Brak River, without waiting for the ebb-tide, thousands of pelicans and flamingoes, the deep rose colour of the one strongly contrasting with the white of the other.

Pelicans are found in the Oriental countries of Europe; they are common on the rivers and lakes of Hungary and Russia; and they are tolerably abundant on the Danube. M. Temminck, who gives the above habitats, had an adult specimen sent from Egypt, and another from the Cape of Good Hope; but they differed only from those of Europe in their greater dimensions. There is no doubt the species exists in Asia. Belon, who refers to Leviticus xi. 18, where the bird is described as unclean, states, that it is frequent on the lakes of Egypt and Judea. When he was passing the plain of Roma, which is only half a day's journey from Jerusalem, he saw them flying in pairs, like swans, above his head, rather low; and adds, that they are seen flying in a large flock, like those birds.

Hasselquist saw the pelican at Damietta, in Egypt. He states, that it comes to that country in the middle of September. "In flying," he says, "these birds form an acute angle, like the common wild geese, when they migrate. In summer they inhabit the Black Sea and coasts of Greece; and in their migrations remain for a few days over Smyrna and other parts of the coast of Natolia, but never stray far from the continent. Some of them remain at Damietta, and in the islands of the Delta, in the Mediterranean, but the greater part go to Egypt."

"Pelicans," says Dr. Richardson, "are numerous in the interior of the fur countries up to the sixty-first parallel; but they seldom come within two hundred miles of Hudson's Bay. They deposit their eggs usually in small rocky islands, on the brink of cascades, where they can scarcely be approached; but they are otherwise by no means shy birds.

"They fly low and heavily, usually in flocks from six to fourteen, sometimes abreast, at other times in an oblique line; and they often pass close over a building, or within a few yards of a party of men, without exhibiting any signs of fear. They haunt eddies under waterfalls, and devour great quantities of carp and other fish. Though they can perch on trees, they are most generally seen either on the wing or swimming. Some species, apparently in mature plumage, have the bill quite smooth above; but individuals have a long, thin, bony process, about two inches high, springing from the ridge of the upper mandible. Similar processes existed in the specimens commented on by Pennant and Forster, which were brought from Hudson's Bay; but no such appearances have been described as occurring on the bills of the white pelicans of the Old Continent."

Adanson, in his "Voyage to Senegal," relates, that in the river Niger, in the way to the island Griel, he saw a great number of pelicans, or wide throats. They moved with great state, like swans, upon the water, and are the largest birds next to the ostriches. The bill of one he killed was upwards of a foot and a half long, and the bag fastened underneath it held twenty-two pints of water. They swim in flocks, and form a large circle, which they contract afterwards, driving the fish before them with their legs. When they have collected a sufficient quantity of fish within this space, they plunge their bill wide open into the water, and shut it again with great quickness; laying up by this means a store of fish in their capacious bag, till they have an opportunity of eating it on shore.

Fish is the food of the pelican, which it captures generally in shallow inlets with great adroitness. It is no diver, but occasionally it dashes from a great height on the wing, and that with such velocity that the fish becomes submerged, though its buoyancy instantly brings it again to the surface.

Mr. Hervey, when in Russia, obtained a curious account of the pelican's mode of fishing, with the assistance of the cormorant. The pelican extends its wings, and troubles the water, while the cormorant, diving to the bottom, drives the fish to the surface; and the pelican, continuing the motion of its wings, advances towards the shore, where the fish are taken among the shallows: afterwards, the cormorant, without further ceremony, helps himself out of the pelican's beak.

Although the pelican perches on trees, it seems to prefer rocky shores. The nest, generally formed of coarse, reedy grass, with a lining of grass of a softer quality, is about a foot and a half in diameter, and is made on the ground. From two to five pure white eggs, but generally two, nearly the same in size at both ends, are laid in it.

Sonnerat found five under a female of this genus. She would not rise to let him pass, but kept her seat; she struck at him with her bill, and screamed when he attempted to drive her from her eggs.

Labat fastened two young pelicans to a stake, where the mother daily brought them food, and remained with them constantly until the evening. The trio became very familiar, suffering Labat to touch them; and the young ones gratefully accepted the little fish which he offered to them, and which they put into their pouches.

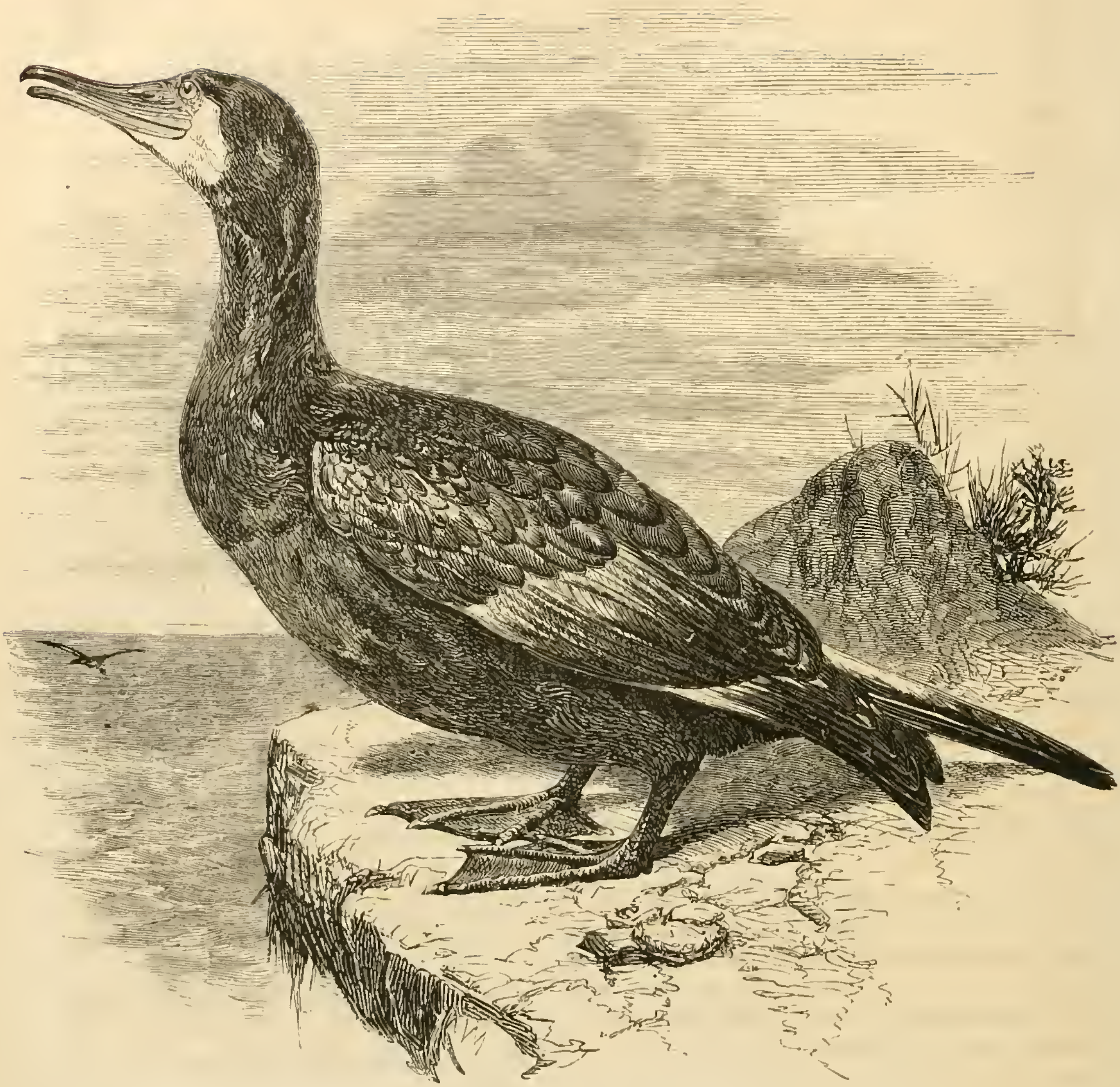
The subject of Montgomery's beautiful poem, the "Pelican Island," was suggested by a short passage in Captain Flinder's voyage to Terra Australis, in which he describes one of those numerous gulfs which indent the coast of New Holland, and are thickly spotted with small islands. "Upon two of these," he says, "we found many young pelicans unable to fly. Flocks of the old birds were sitting upon the beaches of the lagoon, and it appeared that the islands were their breeding-places; not only so, but from the number of skeletons and bones there scattered, it should seem that, for ages, these had been selected as the closing scene of their existence. Certainly none more likely to be free from disturbance of every kind could have been chosen, than these islets of a hidden lagoon of an uninhabited island, situate upon an unknown coast, near the antipodes of Europe; nor can anything be more consonant to their feelings, if pelicans have any, than quietly to resign their breath, surrounded by their progeny, and in the same spot where they first drew it."

The following is one of the poet's pictures of the training of the young:—

"On beetling rocks the little ones were marshall'd;
There by endearments, stripes, example, urged
To try the void convexity of heaven,
And plough the ocean's horizontal field.
Timorous, at first they fluttered round the verge,
Balanced and furled their hesitating wings,
Then put them forth again with steadier aim;
Now gaining courage as they felt the wind,
Dilate their feathers, fill their airy frames
With buoyancy that bore them from their feet,
They yielded all their burthen to the breeze,
And sailed and soared where'er their guardians led.
Ascending, hovering, wheeling, or alighting,
They searched the deep in quest of nobler game
Than yet their inexperience had encountered:
With these they battled in that element,
Where wings or fins were equally at home,
Till conquerors in many a desperate strife,
They dragged their spoils to land, and gorged at leisure."

Another picture, from the same exquisitely graphic pen, may well be added:—

"Day by day,
New lessons, exercises, and amusements
Employed the old to teach, the young to learn.
Now floating on the blue lagoon behold them,
The sire and dam in swan-like beauty steering,
Their cygnets following through the foaming wake,
Picking the leaves of plants, pursuing insects,
Or catching at the bubbles as they brake;
Till on some minor fry, in reedy shallows,
With flapping pinions and unsparing beaks,
The well-taught scholars plied their double art,
To fish in troubled waters, and secure
The petty captives in their maiden pouches;
Then hurry with their banquet to the shore,
With feet, wings, breast, half-swimming and half-flying;
And when their pens grew strong to fight the storm,
And buffet with the breakers on the reef,
The parents put them to severer proofs."



THE COMMON CORMORANT.*

The Cormorant, or Corvorant, as it is sometimes called, inhabits the New as well as the Old Continent. In the latter it is very widely diffused, being spread over a considerable portion of Europe, especially the North.

It never quits the Gulf of Bothnia till that inlet is congealed, and then it may be seen on trees and houses in Sweden, resting on its passage to the ocean. On the Dutch coast, where it arrives in March, it is very numerous; nor is it uncommon on many of the British shores, building its nest of sticks, sea-weed, and grass, on the highest parts of cliffs that impend over the sea, and laying three or more green eggs about the size of those of a goose.

This bird swims very low in the water; even in the sea the body is deeply immersed, little more than the neck and head being visible above the surface. It dives most expertly, pursuing the fish that forms its food with great activity under water. It flies with the neck outstretched, and may often be seen drying its drenched plumage on the shore or on insulated rocks.

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* Phalacrocorax Carbo.

On the Fern Islands the nest is composed entirely of a mass of sea-weed, frequently heaped up to the height of two feet, in which are deposited from three to five eggs of a pale bluish white, with a rough surface.

According to Mr. Laing, in the parish of North Mevan, in Shetland, there are two very high, inaccessible, rocky pillars, on which the cormorant breeds. What is very extraordinary, the rock possessed by these birds one year is deserted the next, and returned to again after being a year unpossessed. This singular practice has been continued during the memory of man. In winter these birds disperse along the shores, and, visiting the fresh waters, commit great depredations among the fish.

"The young, when first hatched," says Mr. Selby, "are quite naked and very ugly, the skin being of a purplish black; this, in six or seven days, becomes clothed with a thick black down; but the feathered plumage is not perfected in less than five or six weeks. I have repeatedly found that, on being thrown into the sea, even when scarcely half-fledged, they immediately plunge beneath the surface, and endeavour to escape by diving. This they will do to a great distance, using their imperfect wings, and pursuing their submarine flight in the same manner, and almost with as much effect, as their parents."

The smell of the Cormorant, when alive, is more rank and offensive than that of any other bird; and its flesh is so disgusting that the Greenlanders will scarcely taste it. In Orkney, however, the young are sometimes regarded as delicious, especially if kept under ground for twenty-four hours, so as to make them tender and deprive them of their fishy taste. In this state they are said to furnish soup but little inferior to that of the hare.

It is not uncommon to see about a score of these birds together, on the rocks of the sea-shore, with expanded wings, drying themselves in the wind. In this attitude they sometimes remain for nearly an hour, without once closing their wings; and as soon as the latter are sufficiently dry to enable the feathers to imbibe the oil, they press that liquid from its receptacle, and dress their feathers with it, at the instant when it can be most advantageously spread upon them.

Cormorants were formerly occasionally trained in England to catch fish for the table. For this purpose they were kept with great care in the house, and when taken out for fishing, they had a leathern thong tied round their neck, to prevent them from swallowing their prey.

Willughby, quoting Faber, says: "When they carry them out of the rooms where they are kept, to the fish-pools, they hoodwink them, that they may not be frightened by the way. When they are come to the rivers, they take off their hoods, and having tied a leather thong round the lower part of their necks, that they may not swallow down the fish they catch, they throw them into the river. They presently dive under water; and there, for a long time, with wonderful swiftness, pursue the fish; and when they have caught them, rise to the top of the water, and pressing the fish lightly with their bills, swallow them, till each bird hath, after this manner, devoured five or six fishes. Then their keepers call the cormorants; and one after another vomit up all their fish, a little bruised with the first nip given in catching them. When they have done fishing, taking the birds on some high place, they loose the string from their necks, leaving the passage to the stomach free and open; and, for their reward, they throw them part of their prey; to each, one or two fishes, which they will catch most dexterously as they are falling in the air."

Colonel Montague had one of these birds sent to him alive and in perfect health. It continued its first plumage till the regular moulting-time—the autumn, when it gradually disappeared; the feathers were replaced by the usual plain ones; and the second moulting, when completely effected, was similar to the last. It was extremely docile, of a grateful disposition, and without any savage or vindictive spirit.

This bird was surprised by a Newfoundland dog, belonging to a fisherman, under the banks of a rivulet that runs into the Bristol Channel; it was taken home, and not being in the accustomed plumage, was reputed to be a curious and unknown species.

As soon as Mr. Anstice heard of it, he went to see the bird, and found that in about a week it had become perfectly familiarised, making one in the family circle round the fire, and suffering the caresses of the children, who were very unwilling to part with it. It was, however, conveyed to Colonel Montague in a basket. As soon as it had arrived and was liberated, it followed the servant who released it, and was offered every sort of food at hand, all of which was equally refused; not even raw flesh was acceptable; and no fish could then be procured to satisfy its hunger, having been twenty-four hours on its journey.

It was, in consequence, crammed with fish, which it took very reluctantly; but even with this rough handling, its formidable bill was not used offensively. After feeding, it was placed on a stool, in a room adjoining the library, where it sat perfectly contented, and adjusted its plumage.

"Observing it," says the Colonel, "so perfectly reconciled to its new abode, and having retired to the library, leaving both doors open, with the intention of returning, we were astonished, in a few minutes, to see the stranger walk boldly into the room, while in conversation with a friend, and coming towards us with the greatest confidence and familiarity, joined us at the fire side, when it resumed the task of pluming and dressing its feathers. From hence we removed this bird to an aquatic menagerie, to which it was carried without offering the least offensive resistance; but the sight of water made it restless, and when liberated, it instantly plunged in and dived incessantly for a considerable time, in hopes of prey; and after searching every part of the pond without obtaining a single fish, it appeared to be convinced there were none, and never made another attempt for three days, during the whole of which time it was crammed with flesh, not being able to procure any fish."

The dexterity with which this bird dived and seized its prey was almost incredible. The quantity of fish it would swallow at a time was truly astonishing.

THE GREEN CORMORANT.*

This bird is called *Crave* in the North of England, and *Scarf* in Orkney. The bill is one inch and ten lines longer than the head; the tail is very long, graduated, conical, and comprised of twelve feathers. The largest of the species measures about two feet six inches in length, three feet eight inches in extent of wing, and weighs nearly four pounds.

The Green Cormorant is very abundant in the regions of the Arctic and Antarctic circles, and is a bird of passage in the eastern countries of Europe. It has much the appearance and manners of the preceding, although the two species are not observed to consort. But they are alike greedy and voracious, and after having overgorged themselves, they are often found on shore in a drowsy or stupid state; but when the torpor is over, they appear again on the water, where they are extremely alert, and not easily shot, as they dive the moment that they perceive the flash of a gun, and take care afterwards to keep out of its reach.

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* Pelecanus graculus. Linn.

In swimming they carry their heads very erect, while the body seems nearly submerged. From the circumstance of their feathers being not quite impervious to water, they do not remain on it very long at a time, but are frequently seen flying about, or sitting on the shore, flapping the moisture from their wings, or keeping them for some time expanded to dry in the sun and the wind. They nestle in the cliffs and rocks, or in trees, the female laying two or three whitish eggs, much elongated, and of nearly equal dimensions at both ends.

THE CHINESE CORMORANT.*

This is the *Leutze* of the Chinese, who instruct it in the art of supplying its owner with fish. On a large lake Sir G. Staunton and his party saw thousands of small boats and rafts, on each of which were ten or twelve of these birds, which, at a signal from the owner, plunged into the water, and returned with a fish of large size. The birds appeared to be so well trained that it did not require either a ring or a cord about their throats to prevent them from swallowing any part of their prey, except what their master was pleased to give them for encouragement and food.

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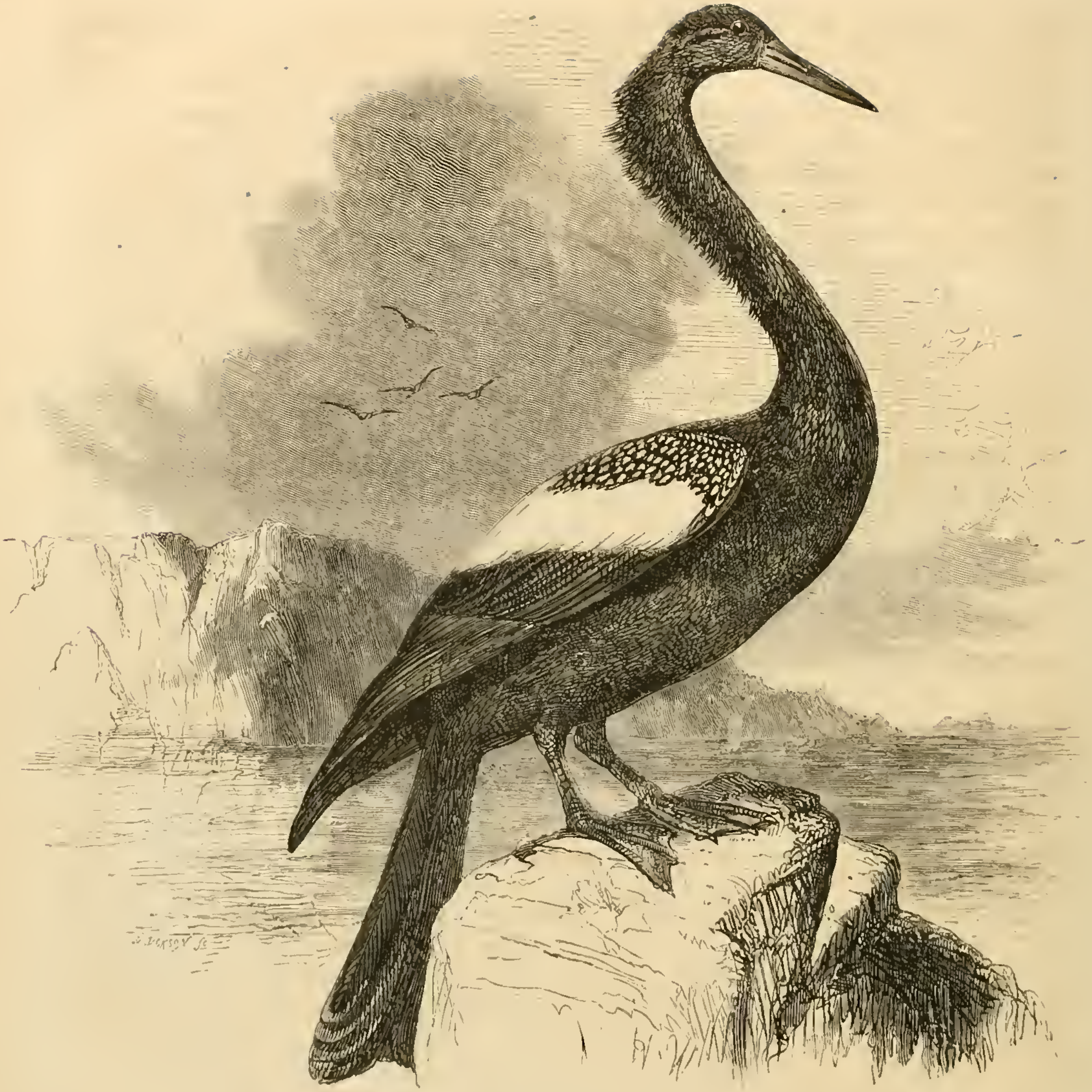
* C. Sinensis.



THE DARTER.*

These extraordinary birds are well described by Buffon when he says:—"The Anhinga offers us a reptile grafted on the body of a bird." Those who have seen the long neck of a Darter, and that only issuing from the water, twisting about above the herbage and among the foliage, say that it might easily be taken for a snake. Le Vaillant states that the neck of the species seen by him in Africa was always oscillating when the bird was perched; and that any one who saw its tortuous movements among the foliage, the body being concealed, would take it for one of the tree-serpents.

"Whether the darter," says Temminck, "be on its perch, or whether it be swimming or flying, it is certain that the most striking and remarkable part of its body is its long, slender neck, which is continually in tremulous oscillation; in flight alone it is unmoved and stretched out, and forms with the tail a straight horizontal line; its long tail, composed of strong and elastic feathers, serves as a rudder when swimming submerged in pursuit of fishes, upon which it principally feeds. When the darter seizes a small fish, it swallows it entire; but if it be too large, it carries it to a rock or the trunk of a tree, and fixing it beneath one of its feet, it cuts it up by strokes of its beak. It establishes its nest on trees or rocks in the vicinity of waters. It is excessively wild in its disposition, and difficult to be approached, especially while swimming. . . . . It is incessantly diving, and re-appears at a great distance."

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* Plotus Anhinga.—Linn.

THE BLACK-BELLIED DARTER.*

This bird is the size of a duck, measuring two feet ten inches in length. It inhabits the Floridas, Brazil, and other parts of South America. It subsists chiefly on fish, which it catches by darting its head forwards. When at rest, it perches on a tree, with its long serpentine neck drawn in between the shoulders. It is scarcely ever seen on the ground.

The Darter associates in small parties, frequently reposing on withered branches that impend over streams, expanding their wings and tail, as if for the purpose of cooling themselves and looking at their image in the water. If approached when in this attitude, they tumble into the water as if dead, and remain submerged for a minute or two, when, at a considerable distance, they thrust up their head and neck, the body still continuing under water. During the heat of the day, they may be seen in great numbers, high in the air, and directly above lakes or rivers. They make their nests of sticks on trees. Their skin is very thick. Their flesh, though fat, is dark-coloured and of a disagreeable, oily flavour.

The Black-bellied Darter is well described by Mr. Ord in Wilson's "American Ornithology," from which admirable work we shall make a few extracts :—"The Snake Bird is an inhabitant of the Carolinas, Georgia, the Floridas, and Louisiana, and is common in Brazil and Cayenne. It seems to have derived its name from the singular form of its head and neck, which, at a distance, might be mistaken for a serpent. In those countries where noxious animals abound, we may readily conceive that the appearance of this bird, extending its slender neck through the foliage of a tree, would tend to startle the wary traveller, whose imagination had portrayed objects of danger lurking in every thicket. Its habits, too, while in the water, have not a little contributed to its name. It generally swims with its body immerged, especially when apprehensive of danger, its long neck extended above the surface, and vibrating in a peculiar manner. The first individual that I saw in Florida was sneaking away, to avoid me, along the shore of a reedy marsh which was lined with alligators, and the first impression on my mind was that I beheld a snake; but the recollection of the habits of the bird soon undeceived me. To pursue these birds at such times is useless, as they cannot be induced to rise, or even expose their bodies.

"Wherever the limbs of a tree project over and dip into the water, there the darters are sure to be found; these situations being convenient resting-places for the purpose of sunning and preening themselves, and probably giving them a better opportunity of observing their finny prey. They crawl from the water upon the limbs, and fix themselves in an upright position, which they maintain in the utmost silence. If there be foliage or the long moss, they secrete themselves in it in such a manner that they cannot be perceived unless one be close to them. When approached, they drop into the water with such surprising skill, that one is astonished how so large a body can plunge with so little noise, the agitation of the water being apparently not greater than that occasioned by the gliding of an eel."

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* Plotus Anhinga.—Linn.

To this account Mr. Bartram adds: "They delight to sit like peaceable communities on the dry limbs of trees hanging over the still waters, with their wings and tails expanded. . . . . At such times, when we approach them, they drop off the limbs into the water, as if dead, and for a minute or two are not to be seen; when on a sudden, at a great distance, their long slender head and neck appear like a snake rising erect out of the water; and no part of them is to be seen when swimming, except sometimes the tip end of their tail.

"In the heat of the day, they are seen in great numbers sailing very high in the air, over lakes and rivers. I doubt not but if this bird had been an inhabitant of the Tiber, in Ovid's days, it would have furnished him with a subject for some beautiful and entertaining metamorphoses. I believe they feed entirely on fish, for their flesh tastes and smells intolerably strong of it; it is scarcely to be eaten unless one is constrained by insufferable hunger."

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ERRATA.

Page 48. The engraving should have been described as one of the *King Vulture.*
— 116. The engraving of the *Reed Warbler* has been inserted instead of one of the *Marsh Harrier.*
— 145. The *Head* of a *Hornbill* appears instead of one of the *Green Tody.*

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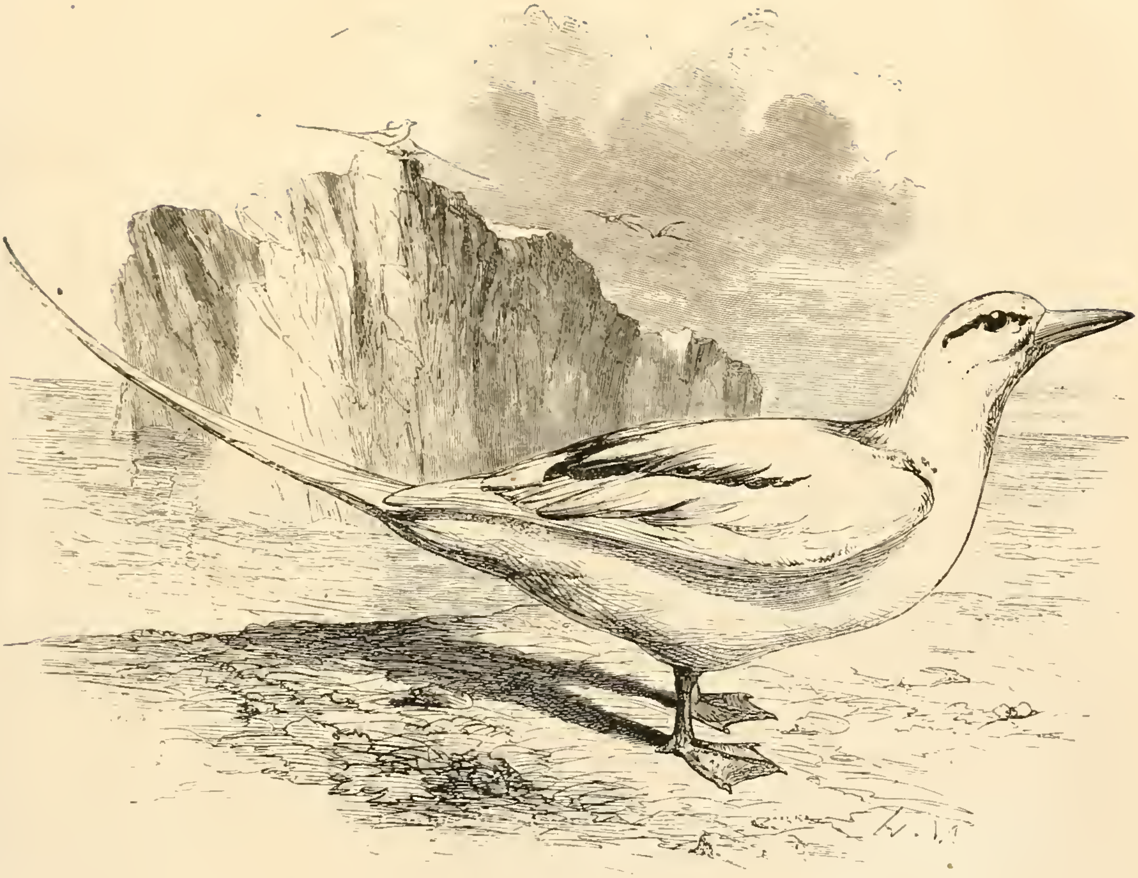
The Sheerwater—The Common Gull—The Skua—The Black-Headed Gull—The Greater Black-Backed Gull—The Kittiwake—The Albatross—The Black Albatross—The Fulmar Petrel—The Stormy Petrel—The Mute Swan—The Black-Necked Swan—The Hooper—Bewick's Swan—The Summer Duck—The Eider Duck—The Surf Scoter—The Chinese Teal—The Buffel-Headed Duck—The Scaup Duck—The Harlequin Duck—The American Wigeon—The Common Shelldrake—The Wild Duck—The Domestic Duck—The Musk Duck—The Teal—The Canada Goose—The Wild Goose—The Domestic Goose—The Snow Goose—The White-Fronted Goose—The Bean Goose—The Bernicle Goose—The Brent Goose—The Cereopsis—The Egyptian Goose—The Spur-Winged Goose—The Goosander—The Red-Breasted Merganser—The Hooded Merganser—The Common Tern—The Noddy Tern—The Arctic Tern—The Crested Grebe—The Horned Grebe—The Eared Grebe—The Red-Necked Grebe—The Little Grebe—The Great Northern Diver—The Red-Throated Diver—The Common or Foolish Guillemot—The Black Guillemot—The Great Auk—The Razor Bill—The Little Auk—The Puffin—The Gannet—The Penguins—The Crested Penguin—The White Pelican—The Common Cormorant—The Green Cormorant—The Chinese Cormorant—The Darter—The Black-Bellied Darter—The Tropic Bird—The Frigate-Bird .. .. 532—628



THE TROPIC BIRD.*

The Tropic Birds, so well known to navigators, form a genus distinguished at once by the two long slender tail-feathers. Their length of wing, and comparatively feeble foot, proclaim them formed for flight, and accordingly they disport in the air far out at sea, swift and untired. They rarely repair to the land for any length of time, and when there, at the period of nidification, perch on rocks and trees.

Their habitual domicile in the Torrid Zone does not separate them from the land ; and they can reach, as they do nearly every night, the isles and lofty rocks that serve them as a place of refuge. M. Lesson, however, so often met with them on sea-tracts entirely devoid of land, and heard them so often above his head in the calm and fine tropical nights, that he thinks they should be considered as oceanic birds.

The *Phaeton Etherius* is about the size of a partridge, and has very long wings.

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* Phaeton Etherius.

THE FRIGATE-BIRD.*

"I had an opportunity, at the Galapagos Archipelago," says Mr. Darwin, "of watching, on several occasions, the habits of this bird, which are very interesting in relation to its peculiar structure. The Frigate-bird, when it sees any object on the surface of the water, descends from a great height, in an inclined plane, head-foremost, with the swiftness of an arrow; and at the moment of seizing with its long beak and outstretched neck the floating morsel, it turns upwards, with extraordinary dexterity, by the aid of its forked tail, and long, powerful wings.

"It never touches the water with its wings, or even with its feet; indeed, I never heard of one being seen on the surface of the sea; and it appears that the deeply-indented web between its toes is of no more use to it than are the shrivelled wings beneath the wing-cases of some Coleopterous beetles.

"The Frigate-bird has a noble appearance when seen soaring in a flock at a stupendous height (at which time it merits the name of the Condor of the ocean), or when many together are darting, in complicated evolutions, but with the most admirable skill, at the same floating object. They seem to take their food quietly, for between each descent they raise themselves on high, and descend again with a swift and true aim. If the object (such as offal thrown overboard) sinks more than six or eight inches beneath the surface, it is lost to the Frigate-bird. I was informed at Ascension, that when the little turtles break their shells, and run to the water's edge, these birds attend in numbers, and pick up the little animals (being thus very injurious to the turtle-fishing) off the sand, in the same manner as they had from the sea."

Arriving now at the completion of the purpose we formed, it may be well to glance at the course which has been taken. After examining the structure of a bird, and various important and interesting facts in its general history, the first objects of contemplation were the *Rapacious* birds, building their nests in the wildest solitudes and on the loftiest rocks. Their curved and powerful beak, strong limbs, acerated talons, robust head and neck, expansive wings, rapid and long flight, characterise them as eminently carnivorous. All of them subsist by rapine on living prey or dead carcases; and, unlike the carnivorous races, they can dispense with water. The females are handsomer and generally one-third larger than the males, and occupy a similar place in the creation with the lion, the tiger, the bear, and all the different feline and canine races. Like the carnivorous quadrupeds, their temperament is sanguinary and ferocious; and their voice is hoarse, shrill, or piercing. Such are the vultures, the eagles, the falcons, and the owls, some of the most remarkable types of which have been particularly described and illustrated.

The *Insessorial* birds came next under review—an exceedingly numerous and diversified order, having apparently, at first, a character purely negative; since it embraces all the birds which are neither swimmers, nor waders, nor climbers, nor gallinaceous, nor rapacious. On a closer comparison, however, we soon discover among them a great resemblance of structure, and gradations so insensible from one genus to another, that it becomes difficult accurately to establish sub-divisions. Their aliment consists of insects, fruits, and grains. It is more exclusively granivorous in proportion to the thickness of the bill, and more exclusively insectivorous as the latter is more attenuated. Hence the division of this order according to the beaks of the birds, as *gaping, toothed, conical,* and *slender.*

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* Fregata Aquila.

To these succeed the *Zygodactyli,* the birds whose external toe is directed backwards, like the thumb, whereby they have a more solid support, of which some of these birds avail themselves, by hanging and climbing on the trunks of trees. As their bill is more or less strong, their food consists of insects and fruits. Some of them, as the woodpeckers, have peculiar means of obtaining food.

An order is now reached, to which the name of *Gallinaceous* birds has been given from their affinity to the domestic cock. It is remarkable as having furnished us with the greater part of our domestic poultry and with some excellent game.

The fifth order deserves the appellation of *Grallæ,* from the habits of the birds, and from the structure from which those habits result. They are known by the nudity of the lower part of their legs, and, in general, by the height of their tarsi—circumstances which enable them to walk to a certain depth in the water without wetting their feathers, and thus to fish by means of their long neck and bill, which are commonly proportioned to the length of their legs. Those which have a strong bill feed on fish and reptiles; those whose bill is weak, on worms and insects. A very small number of them subsist partially on grains and herbs, and these alone live at a distance from the water.

The last order which came under review was that of the *Swimming* birds, whose feet and legs are expressly formed for such locomotion, being placed far back on the body, with short and compressed tarsi, and webs between the toes. A close, shining plumage, moistened by an oily secretion, and furnished near the skin with a thick down, protects them from the water, on the surface of which they live. They are also the only birds in which the neck is longer, and sometimes considerably so, than the legs, because, while swimming on the surface, they have frequent occasion to seek their food below it.

How numerous and diversified then are the feathered tribes, whom we may address in the words of the poet:

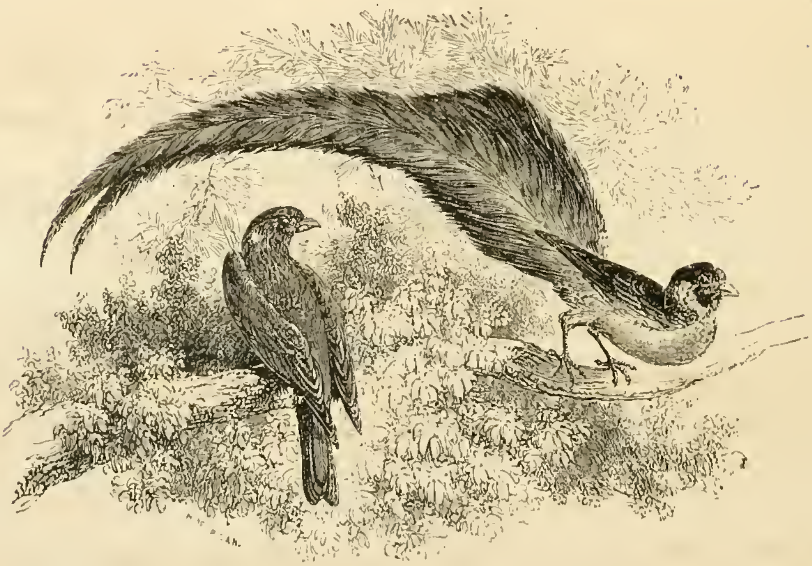
"Ye birds that fly through the fields of air,
What lessons of wisdom and truth ye bear;
Ye would teach our souls from the earth to rise;
Ye would bid us all grovelling scenes despise;
Ye would tell us that all its pursuits are vain,
That pleasure is toil—ambition is pain,—
That its bliss is touched with a poisoning leaven;
Ye would teach us to fix our aim in heaven.

Beautiful Birds of lightsome wing,
Bright creatures that come with the voice of Spring;
We see you arrayed in the hues of the morn,
Yet ye dream not of pride, and ye wist not of scorn!
Though rainbow-splendour around you glows,
Ye vaunt not the beauty which nature bestows;
Oh! what a lesson for glory are ye,
How ye preach the grace of humility!

Swift Birds that skim o'er the stormy deep,
Who steadily onward your journey keep,
Who neither for rest nor for slumber stay,
But press still forward, by night or day—

As in your unwearying course ye fly
Beneath the clear and unclouded sky;
Oh! may we, without delay, like you,
The path of duty and right pursue.

Sweet Birds that breathe the spirit of song,
And surround Heaven's gate in melodious throng,
Who rise with the earliest beams of day,
Your morning tribute of thanks to pay;
You remind us that we should likewise raise
The voice of devotion and song of praise;
There's something about you that points on high,
Ye beautiful tenants of earth and sky!"



PREFACE.

Among the favourites of our early life are some of the feathered tribes. Even the infant is attracted to the cage of the canary, the goldfinch, and the parrot. Coleridge cites a fact of this kind as he asks the nightingale to repeat her strain:

————————" My dear babe,
Who, capable of no articulate sound,
Mars all things with his imitative lisp,
How he would place his hand beside his ear,
His little hand, the small fore-finger up,
And bid us listen."

We cannot fail to admire his purpose to blend true knowledge with the interest thus evinced, rendering the one a firm foundation for the other, as he adds:

————————" I deem it wise
To make him Nature's playmate;"

and, doubtless, a rich reward awaits that parent who occasionally takes his child from spot to spot, to look at the birds which find there a dwelling-place; and to talk over the details of their structure, the form and contents of the nest, and the diversified and marvellous appliances of instinctive power.

With such an object, instead of regarding only a few birds, he will direct attention to the many, sympathising with Cowper, as he said:

" Ten thousand warblers cheer the day, and one
The live-long night: nor those alone, whose notes
Nice-fingered art must emulate in vain;
But cawing rooks and kites that swim sublime
In still repeated circles, screaming loud;
The jay, the pie, and e'en the boding owl,
That hails the rising morn, have charms for me."

Nor will those who have a true taste for this interesting branch of Natural History limit their knowledge to the birds of their own land. Residents in England will become acquainted with the feathered tribes of Africa, Asia, America, and Australia; and the dwellers in other countries will be equally intent on gaining a knowledge of British birds. The wood, the mountain, the barren waste, the craggy rock, the marsh, the lake, and the river, are never searched in vain; each has its peculiar inhabitants, that enliven the scene and interest and gratify the observing mind.

Sound knowledge must be systematic; not that we can give an approval to many things that claim to be so. Fully aware that persons have been frequently deterred by them from pursuing their studies in Natural History, we would reiterate the words of Loudon: "Those who employ themselves in disguising and degrading science by cacophonous nomenclature and a parade of barbarous Latinity, which fools think learning, are entitled to reprobation and contempt. There are many such in France, and some among ourselves—great men in their little circles, they do well to make the most of this; for they may rest assured, that however high they may rank in their own estimation or in that of their *coteries*, the world neither knows nor cares anything about them." With no less propriety and force Mr. Vigors says of the student of such classification: "It is upon the labours of man that he dwells, and not upon the works of the creation. He dwindles, as it were, into a mere compositor of the volume of nature, artificially putting together the symbolic words that stand for ideas, while the ideas themselves, in their true meaning and spirit, escape him. And thus the exertions which, properly directed, might have tended to explain the laws and elucidate the operations of Nature, which might have been devoted to a study purely intellectual, are lost in a pursuit which is strictly and exclusively mechanical."

It has, therefore, been the aim in the preparation of this volume to take as extensive a view of Birds as its limits would allow, and to do so according to a classification which may alike be easily understood and remembered. The wish of the writer has been to combine the popular with the scientific, rendering them mutually subservient to the benefit of the reader. In doing so, he has gratefully availed himself of the recorded observations of the most eminent naturalists both in this and in other lands. He has the highest appreciation of their labours, often prosecuted in circumstances of difficulty, toil, and privation; and would ask it for them, of others. Many of them have also conferred on us special obligation by accurately depicting birds of great rarity to the eye; some of these appear in this volume, and not a few of its numerous illustrations have been derived from the living birds.

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